GURBACHAN SINGH FOUNDATION
for
Research, Education and Development

GSFRED NEWS LETTER

Vol. 1 (1) Jan-July, 2018

In this issue ...

From Chairman Desk

I superannuated from government service on 26th May, 2017. During my 39 years of professional career, I enjoyed working with each one of you in the National Agricultural Research and Education System (NARES). Born in educationally, politically and economically disadvantaged village "Bhaini Maraj" in Sangrur district of Punjab, rose to the position of Chairman, Agricultural Scientist Recruitment Board (ASRB) (equivalent to Secretary to Government of India). I sincerely thank the Almighty for His blessings on me and my family. Prior to occupying the position of Chairman, ASRB; I served the country as Agriculture Commissioner, Govt. of India; Director of Central Soil Salinity Research Institute (CSSRI), Karnal; Assistant Director General, ICAR and Head of Crop Production Division at Indian Grassland and Fodder Research Institute, Jhansi. Wherever I worked, served with utmost sincerity, honesty and dedication and created out of box thinking to establish new milestones which were rewarded in terms of several prestigious awards and peer recognitions.

As Assistant Director General (ADG) at ICAR, conceptualized formulation and implementation of two mega research programs, one on climate change and the other one on organic farming during 10th Plan. These initiatives culminated into flagship programs of ICAR during 11th and 12th Plans. During my tenure as Director, CSSRI got the Best Institute Award of ICAR and also the Ground Water Augmentation Award of Ministry of Water Resources. As Union Agriculture Commissioner, facilitated formulation and implementation of focused programs which resulted in ever highest production of food grains continuously for two years, which also included additional production of 3.5 million tons of pulses in one year. Notable reforms taken as Chairman, ASRB included: establishment of online examination facility at 23 centres; regular conduct of ARS and NET examinations; regularization of promotion of scientists under Career Advancement Scheme (CAS); revision of syllabus and question bank in 56 disciplines; upgradation of experts/advisors list; attracting talent from abroad; enhancement in efficiency, transparency and productivity of ASRB and initiating approvals for construction of independent ASRB building on 2 acres of land adjacent to NBPGR, New Delhi. During my tenure, about 2000 scientists were recruited through examinations and direct advertisements, promoted 1503 scientists and issued 17870 National Eligibility (NET) certificates.

God was kind enough to bestow all honours, peer recognitions and awards which an agricultural scientist can dream of achieving. During the professional career received more than 20 awards from central and state governments, universities, research institutes, academies, professional societies, NGO's etc. Notable awards and honours included: Rafi Ahmed Kidwai Award and Hari Om Ashram Trust Awards of ICAR; Recognition Award and Dr. M.S. Randhawa Memorial Awards of NAAS; Founder President, Indian Society of Soil Salinity and Water Quality; President, Indian Society of Agronomy; Scientific Advisor, International Foundation for Science, Sweden; FAO Cactus Net Regional Coordinator for West Asia; Member, Working Group on Sustainable Drainage, International Commission on Irrigation and Drainage (ICID); Member, Editorial Board Experimental Agriculture (UK) and Fellowship of NAAS and 6 other scientific societies.

Served as Chairman/Member in several national level committees related to agricultural research, development, education and policy. Visited more than 30 countries to present keynote papers in International conferences and to chair technical sessions, bilateral projects/consultancies and as Head/Member of Indian Delegations to represent the country in meetings at CGIAR Centers, FAO and BRICS etc. Published more than 300 papers/articles/books/bulletins including about 40 in International high impact journals.

Whatsoever I could achieve was all because of love, affection, support and guidance of seniors, colleagues and juniors. I am now retired but not tired. I have decided to revert back to research, academics and farmers welfare. To achieve this dream my family has established Dr. Gurbachan Singh Foundation for Research, Education and Development (GSFRED). I hope and believe, there will be enough opportunities to work together.

The First Newsletter depicting activities of the Foundation has been published. I will look forward for the feed back and suggestions from the seniors, colleagues and the loved one juniors.

(Gurbachan Singh)

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Launch of G S Foundation

The Gurbachan Singh Foundation (GSF) for Research, Education and Development (RED) was launched during the Retirement Thanks Giving function of the Founder Chairman on 20th November, 2017. The launch function was attended by more than 250 persons including scientists, directors of ICAR institutes, vice chancellors, development and policy experts, civil society representatives, progressive farmers and students. The mission and objectives of the foundation included " *promotion of upscaling of scientific interventions for skill and entrepreneurship development amongst rural youth including women, farmers and students to contribute achieving Millennium Development Goals (MDG's) of poverty alleviation, literacy, employment, food and nutrition security, conservation of natural resources and environment*". Some of the specific objectives will be (i) creating scientific temperament in students by providing them an opportunity of training and visit to laboratories and field experiments. The concept of "*learning science by doing*" at the school level to search talent and scientific temperament will be advocated; (ii) to conduct research and establish demonstrations for upscaling of scientific technologies in general and agriculture in particular for adoption by the farmers and stake holders; (iii) to organize seminars, symposium, workshops, brain storming sessions, group meetings, exhibitions, declamations and debates to share knowledge and exchange of ideas for popularization of scientific and educational innovations; (iv) to publish books, bulletins, journals, reports and newsletter to share foundation activities and programmes with the stake holders; (v) foster collaboration with regional, national and international organizations to promote research, education and developmental activities for the benefit of farmers, students and rural unemployed youth; (vi) to provide consultancy service in agricultural research, education and development and also establish linkages with universities and research institutes to promote sandwitch higher education and research programmes; (vii) to act as a platform for accelerated public-private partnerships at home and abroad to achieve objectives of the foundation and (viii) to establish state of the art experimental/ demonstration centres and educational institutions (schools, colleges, universities) for training, skill and entrepreneurship development and also to produce quality human resources.













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Infrastructure Development

To carry forward objectives and activities of the foundation, 6.5 acre prime land at 14 milestone on Karnal-Pehowa State Highway Number 9 has been purchased. The site is named as the GSF Research, Education and Development Centre (GSFRED Centre). The experimental and educational centre is being developed on the pattern of International Research and Education Standards. To start with, three rooms have been constructed to accommodate Founder Chairman office, visitor room and office staff. A big conference room, library, museum hall, two laboratories, seed store, cabins for research scholars and students, shed for tractors, vehicles and implements are near completion and will be ready to occupy by end September. The farm has been laid out as a model agronomic farm to conduct and demonstrate research meeting international standards. Several long-term experiments have already been laid out including (i) evaluation of 12 rice varieties in terms of productivity, resource use efficiency; resilience to climate change and pests including weeds; economics and sustainability; (ii) crop diversification options for rice-wheat sequence. Alternate crops like soybean, maize, pulses, vegetables are grown in Kharif to replace rice; (iii) integrated farming system model and (iv) in-situ residue management option to stop burning of rice and wheat stubbles. A sizeable area of the farm is put under seed production of new basmati and non-basmati varieties of rice.

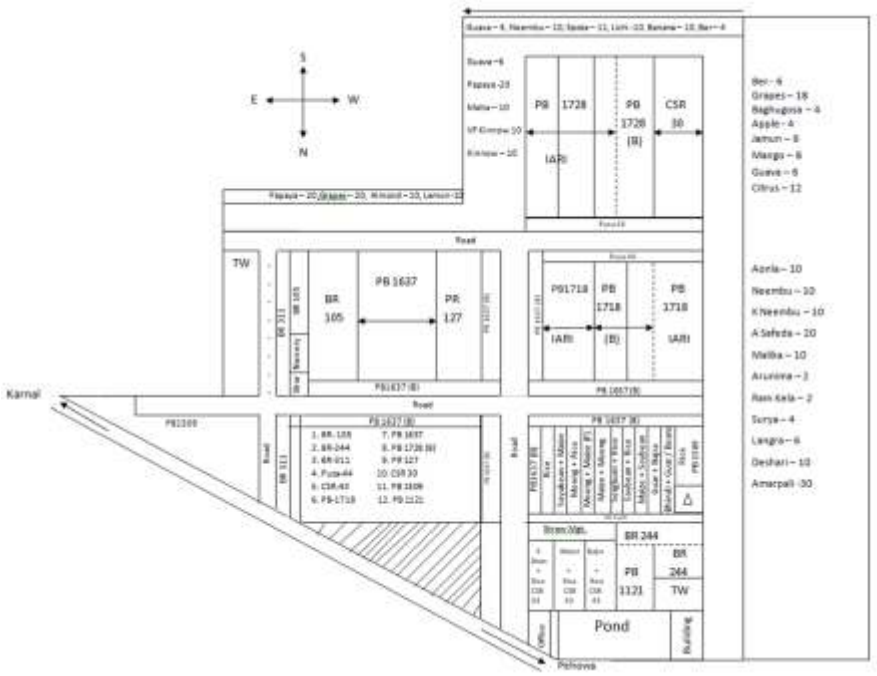
Academic Block

Administration Block

Research, Education and Development Centres

To promote objectives and activities of the foundation, region specific research, educational and development centres will be established. To start with, first centre has been established near Karnal. This is located at 14 milestone on Karnal-Pehowa state Highway Number 9. The place is about 7 Kms from Central Soil Salinity Research Institute (CSSRI), karnal. It is worthwhile to mention that the founder chairman started his scientific career from this prestigious institute in 1978 and conducted his first research and demonstration experiments in farmers fields of villages Kachhwa, Birnaraina, Sagga and Sambli. The second research and education centre is being established on ancestral land of chairman situated at village Bhaini Maraj, district Sangrur, Punjab.

Farm Layout



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Original Soil Properties and Ground Water Quality of Karnal Experimental Farm

Two profiles were dug out upto 180cm depth to analyze soil properties of the experimental farm. The profiles were characterized with the help of scientists from CSSRI, Karnal. For the examination of physico-chemical properties, soil samples were taken at an interval of 15cm from the surface upto 180cm depth. The analysis is reported in Table below . There was a gradual increase in pHs of the soil with depth. Beyond 30cm depth, the pHs of the soil is quite high and not suitable for growing salt sensitive crops. The electrical conductivity is well within the range (< 4.0 dS/m) of growing most crops and representing non-saline character. Except the above 30cm soil layer, the organic carbon content is very low throughout the profile. Calcium carbonate content in the form of granules is present throughout the profile indicating the character of caliche bed between 90 to 130cm depth.

Visual observations indicated very low water infiltration rate and deflocculated muddy water condition after rain or irrigation where surface soil was removed and lower layer soil was spread along the dikes of a pond dug out for rearing fish. The soil analysis clearly represents the characteristics of a surface reclaimed alkali soil.

Continuous use of rotavator machine for growing crops for last several years made the sub-surface layers so compact and hard restricting free flow of water into the deeper layers. The ground water quality for irrigation as evidenced from tubewell water analysis is good and suitable for irrigating almost all crops. A new tubewell was installed to meet drinking water need. The depth wise samples were taken to ascertain the water quality upto 250 feet. The analysis report is given below :

Original Properties of the Experimental Soil

	Profile I							Profile II						
Depth (cm)	pHs	ECe (dS/m)	OC (%)	Na^+ (meq/l)	K^+ (meq/l)	Ca+Mg (meq/l)	$CaCO_3$ (%)	pHs	EC_e (dS/m)	OC (%)	Na^+ (meq/l)	K^+ (meq/l)	Ca+Mg (meq/l)	$CaCO_3$ (%)
0-15	8.42	1.52	0.45	13.61	0.13	12.0	1.22	8.55	1.68	0.45	8.62	0.04	11.0	1.02
15-30	9.24	1.29	0.22	12.74	0.07	20.0	0.66	9.45	1.12	0.29	5.41	0.04	10.0	0.41
30-60	9.56	1.61	0.13	15.92	0.06	12.5	0.94	9.88	1.32	0.13	6.92	0.03	8.5	1.09
60-90	9.64	1.69	0.13	15.80	0.04	11.5	1.10	10.02	1.28	0.27	6.75	0.05	11.5	1.98
90-120	9.63	1.48	0.11	11.69	0.03	9.5	0.92	10.00	1.65	0.12	5.04	0.03	10.5	1.45
120-180	9.87	1.64	0.14	9.02	0.04	9.0	1.93	10.10	2.26	0.12	9.57	0.02	11.0	6.18

Tubewell Water Sample Analysis

EC (dS/m)	PH	CO (meq/l)	HCO_3 (meq/l)	Ca+Mg (meq/l)	RSC (%)
0.82	8.03	NIL	7.0	4.3	2.7

Depth wise Analysis of Tubewell water

Depth (feet)	EC	pH	CO_3	HCO_3	Ca + Mg	RSC
0-50	0.66	6.78	Nil	5.8	4.6	1.2
50-100	0.84	6.80	Nil	7.4	4.2	3.2
100-150	0.81	6.79	Nil	7.4	3.6	3.8
150-200	0.73	6.65	Nil	6.8	4.0	2.8
200-250	0.61	6.69	Nil	6.0	3.6	2.4

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RABI 2017-18 EXPERIMENTS

Evaluation of Wheat Varieties for Resilience to Weather/Climate Change

During Rabi 2017-18, four promising wheat varieties viz HD2967, HD3086, WB2 and DBW 173 were sown to evaluate their performance in a reclaimed sodic soil. Each variety was planted in large area/plots to study growth behavior during the season and overall productivity. All varieties were sown on 6th November, 2017 and harvested on 17-18 April, 2018. Recommended agronomic practices including dose of fertilizers through diammonium phosphate, urea and zinc sulphate were applied. In addition to pre-sowing irrigation, four irrigations on 4 December, 2017, 15 January, first March and 18 March, 2018 were applied using good quality tubewell water. The average grain yield of four varieties are reported in Table below. A new wheat variety DBW173 developed by Indian Institute of Wheat and Barley Research (IIWBR), Karnal out yielded other three varieties with average grain yield of 6.0 t/ha.

Grain yield of wheat varieties

Wheat variety	Sown area (ha)	Grain yield (t/ha)
HD 2967	0.36	5.83
HD 3086	1.00	4.98
WB 2	0.48	5.63
DBW 173	0.08	6.00

Phalaris minor Management Strategy

Rice-wheat cropping system is most popular among the farmers particularly in those areas which witnessed Green Revolution. This system made tremendous contribution to food production of the country and economy of agrarian states like Punjab and Haryana. However, the productivity rate of this cropping sequence have slowed down with the emergence of problems of decling soil fertility; ground water draw down and infestation of weed flora. With the development of resistance in *Phalaris minor* against the most commonly used herbicides, the density of this weed has increased tremendously in wheat crop. Plant population of *Phalaris minor* in four varieties of wheat crop before and after application of herbicides was recorded at 15 places including zero tillage plot. About 148 plants of *Phalaris minor* were observed in one square feet area before application of herbicides. Three sources of herbicidies viz; Sardar (Sulfosulfuran 75% WG), Evantor (Sulfosulfuran 75% WG) and Total (Sulfosulfuran 75% WG + Metasulfuron 5% w/w) were tried for control of this weed. These herbicides were applied at 25 days after sowing before Ist irrigation the weedicide : with trade name Total was little better than the other two but the overall weed control was not satisfactory. This was followed by application of herbicides viz; Shagun 21-11 which contains 42% w/w metribuzin 0.1, 12% w/w clodinafop propagyl, 12% w/w precipitated silica, 7% w/w modified styrene acrylic polymer, 4% w/w dipole naphthalene sulphonate sodium salt and 6.5% polyarylphenyl ether sulphate ammonium salt and Jhatka 15% wp piroxofup-proparyl and 15% wp clodinatop-propargyl at 50 days after sowing. It reduced the *Phalaris minor* population significantly. Only few plants of *Phalaris minor* were observed in zero tillage sown plot. The herbicide was sprayed by power spraying machine mounted on moving four wheeler vehicle developed by United Phosphate Limited (UFL), Bombay. After the spray mats of dried *Phalaris minor* were observed in all the fields. Though there was phytotoxicity to the tune of 10-15% on wheat crop, but there was almost 100% control of *Phalaris minor*.

Population of Phalaris minor in wheat fields

Plot no.	Population (No. of plants / Sq ft)			
	R1	R2	R3	Mean
	Before application of herbicides			
1	181	215	140	179
2	197	155	210	187
3	139	76	150	122
4	191	115	81	129
5	131	88	160	126
Mean	167	130	148	148
Zero tillage	24	13	32	23

Integrated Farming System Model for Doubling Farmer Income

An integrated farming system model for 1.5 acre land holding has been established to make multiple use of resources, whole family employment, risk proofing due to climate change, organic produce, regular high income, *in-situ* energy generation for light and domestic cooking, agro-tourism and environment protection. The system components include pond for rain water storage and rearing fish, dairy, horticulture, poultry, piggery, goatery, duckery, mushroom, bee keeping etc. A pond of 40m×20m dimensions, fruit plants of fig, guava, pomegranate, peach, plum, pear, lemon on the dykes of the pond already established. Vegetables like lady finger, cowpeas, sponge gourd, bitter gourd, clusterbean, cucumber, watermelon, brinjal, chillies etc. were grown during Kharif on the dykes. Quality analysis of water in the pond is reported below.

Pond Water Sample Analysis (RSC)

EC	0.19	Cr	10.2
pH	7.60	Cu	Nil
CO_3	Nil	Fe	17.6
HCO_3	1.60	Mn	2.48
Ca+Mg	0.40	Ni	Nil
RSC	1.20	Pb	Nil
As	Nil	Se	Nil
B	Nil	Zn	0.69
Cd	0.10		

Evaluation of Fruit Trees as Boundary Plantation

Farmers, in general, practicing rice-wheat cropping sequence in assured irrigation situations are reluctant to grow trees alongwith crops as mixed plantations with the apprehension of shade on the companion crop and competition for water and nutrients. As a substitute to mix agroforestry system, several fruit trees were planted at 2m×2m spacing along the boundary of the experimental farm. The fruit trees planted included : eight varieties of mango (Amarpali, Dasheri, Langra, Surya, Mallika, Ramkela, Alphonso and Kesar), guava, lemon, zyziphus, sapota, lichi, kinnow, seedless kinnow (Daisy), papaya, orange, sweet lime, grapes, Emblica (amla), Psygium (jamun)etc. All fruits are well established and making satisfactory growth. Interspaces between fruit trees are planted with seasonal vegetables like lady finger, cowpeas, clusterbean, cucurbits, beans during Kharif followed by almost all vegetables during Rabi to generate additional regular high income.

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KHARIF 2018 EXPERIMENTS

Evaluation of 12 Promising Rice Varieties for Resilience to Weather/Climatic Variations

An experiment was planted on 26-27 June, 2018 to compare the relative performance of promising varieties of rice grown by the farmers in Punjab and Haryana. The performance is being evaluated in terms of productivity, resource use efficiency, resilience to varied weather parameters like high and low temperature, sunshine hours, relative humidity and rainfall pattern etc during the season and economics. Relative resistance/ competitiveness to pests including weeds is also monitored. About 30 days old nursery of all varieties was transplanted and recommended agronomic practices were followed before and after planting. The varieties planted included both basmati and non-basmati types. Twelve varieties being compared are : CSR 30, PB 1718, PB 1637, PB 1728, PB 1509, PB 1121, PR 127, CSR 43, PUSA 44, BR 311, BR 244 and BR 105.

Crop Diversification Options for Rice-Wheat Cropping Sequence

Continuous cultivation of rice during Kharif (June to October) followed by wheat in Rabi (October-April) for last more than five decades in north-west India had resulted in fatigue of natural resources in terms of draw down of ground water, multiple nutrient deficiency in soil, air pollution due to burning of residue and loss of biodiversity including beneficial microbes. Diversification from rice-wheat systems to maize, millets, oilseeds, vegetables, fruits, flowers and other high value medicinal and aromatic plants is need of the hour to conserve water, soil, biodiversity and environment for survival of mankind in the future.

A long term field experiment was initiated in July, 2018 to explore possibility of growing alternate crops to replace some area from rice to other less water requiring alternate crops. The treatments included : (i) rice as sole crop, (ii) soyabean as sole on raised bunds, (iii) green gram sole on raised bunds, (iv) maize as sole on raised bunds, (v) soyabean on bunds + rice in furrow, (vi) green gram on bund + rice in furrow, (vii) maize on bund + soyabean in furrow, and (viii) clusterbean on bund and maize in furrow. The crop options during Rabi will include: mustard, gram, winter maize, berseem, lentil, vegetables as sole or in combination with wheat following furrow-ridge planting geometry. Performance of crops in different treatments will be evaluated in terms of overall productivity, resource (water, nutrient) use efficiency, change in physical, chemical and biological properties of the soil overtime domain; nutritional security, green house gases sequestration and economics.



Seed Production of Promising Rice Varieties

Quality seed is one of the most important inputs to increase production and profits. A sizeable area is put under recently developed/released varieties of rice. The rice varieties grown for seed production included: PB 1718, PB 1728, PB 1637, PR 127, PB 1509 and BR 105.


In Situ Decomposition of Residue for Manure Production

More than 80 percent farmers in north-west India cultivate rice and wheat crop sequence. After harvest, almost all paddy straw and about 50% wheat stubbles are burnt leading to air pollution and environment degradation. Though burning of straw is legally banned but many farmers continue to burn the straw in the field to facilitate timely sowing of next crop. On the intervention and direction of judicial courts; several options such as making electricity, bio CNG, ethanol production are being explored by the state governments of Punjab and Haryana. Large scale handling, storage, transport and processing of such huge quantity of straw will have its own implications. The practical, viable and easy approach to manage straw would be to handle it at individual farmer fields and convert it into manure through decomposition by use of microbes and amendments.

An exploratory trial is being established to explore the possibility of converting rice, wheat and other miscellaneous waste available at the farm into manure/compost by the use of physical, chemical and biological methods. The treatments being compared included : application of different kinds of manures like FYM, poultry manure; horse manure; press mud; urea and microbes in different doses and combinations. The basic hypothesis would be to decompose straw within a time limit of 30-45 days. In case of rice, the loose straw after combine



harvest constitutes roughly about 20-30% of total stubble and straw biomass. The farmers can collect the loose straw at one corner of the field. Once the loose straw is managed, wheat crop can be sown by the use of zero tillage machine or happy seeder. The collected loose straw at the corner of each acre can be effectively converted to manure by the use of FYM and microbes. The manure prepared this way will substitute for fertilizers in the following crop.

Visits Abroad

Europe

After retirement, the Chairman proceeded on study tour to several countries in Europe including France, Germany, Switzerland, Italy, Austria and Venice. The Chairperson of Adarsh Group, MD and Academic Head of Montfort World School also accompanied. The main objective of the visit, in addition to sight seeing, was to explore the possibilities of research and educational collaboration with universities and research institutes in Europe.

North America

The Chairman alongwith Chairperson of Adarsh Group visited United States of America and Canada for one month (September to October, 2017). The main objective of the visit was to revive scientific ties with eminent scientists, settled in US and Canada, which founder chairman had established during his service period and also to explore possibilities of future collaboration/cooperation in the area of agricultural research and education. During the visit, discussion were held with Dr. Gurdev Khush, Emiratus scientist, University of California, Devis; Dr. N.T.Singh eminent soil scientist in Sacramento and Dr. Peter Felker, an international expert on Prosopis and Cactus rescord.




Collaboration Opportunities with Southern Illinois University (SIU), USA

During the visit to United States, the chairman alongwith chairperson of Adarsh Group visited Southern Illinois University (SIU) in Carbondale for 2 days. They were received by Dr. Andrews (Dean International Education) and Dr. Lee (Coordinater, International Programmes). Possibilities for collaboration in education and research between SIU and Adarsh Group were discussed. This was followed by a visit to various colleges and departments of SIU. Agronomy department of SIU falicitated the chairman with a momento. Possibilities of future collaboration between GSF and SIU in natural resources management research were discussed. As a follow up, Dr. Andrews and Dr. Lee visited Karnal to have further discussion with Adarsh Group to develop MOU for collaboration.

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Mauritius – India Joint Workshop on Agriculture

Mauritius–India Joint Workshop was organized by the Ministry of Food Processing and Agriculture in Mauritius to improve agriculture and allied sectors for future food, nutrition and livelihood security and to promote post harvest processing, value addition, marketing, export and trade. The Indian side was represented by Sh. Pritpal Singh Pannu, Chairman, NIFA and coordinator of India-Mauritius initiative; Dr. Gurbachan Singh, Founder Chairman, GSFRED; Dr. R. K. Malik, Ex- Joint Director, National Dairy Research Institute, Karnal and Dr. Satinder Kumar, Deputy Director (Horticulture), Govt. of Haryana. The Mauritius side was represented by Senior Officials of the Ministry of Food Processing and Agriculture. The workshop was inaugurated by the Honourable Minister of Agriculture, Mauritius. Overall scenario of agriculture was presented by Mauritius representative which was followed by a comprehensive presentation by Dr. Gurbachan Singh on scenario of Indian Agriculture. Senior Officers and Scientists from Mauritius side made detailed presentations covering natural resource management, crop improvement, protection and production; horticulture; livestock sector, mechanization; green house and protected cultivation, post harvest processing and value addition, marketing infrastructure, export and trade etc. Each Mauritius presentation was followed by presentations from the Indian side to share technologies and innovations available in India for location specific transfer to Mauritius side. The gaps in knowledge were identified after discussions in smaller groups and proceedings were finalized for approval and implementation in the future.

Mauritius delegation in discussion with the Chairman

Earth Day Celebration with School Students

On the eve of Earth Day, about 400 students of Adarsh Public School, Karnal visited GSF Research, Education and Development Centre near Kachhwa village. The students took keen interest in visiting various experiments and demonstrations initiated at the centre. The chairman interacted with staff and students and apprised them about the importance of soil and necessity of its conservation for survival of the mankind. Students were exposed to different kinds of fruits, vegetables and other crops grown at the farm. Staff and students alongwith GSF staff planted tree saplings and also took pledge to save mother Earth. Lateron, they kept bowls filted of water and grains for the welfare and well being of birds and small animals.

QRT Chairman of NIASM, Baramati

The ICAR has nominated Dr. Gurbachan Singh as chairman of the Quinquennial Review Team (QRT) to review the nine years work of National Institute of Abiotic Stress Management, Baramati. This is the first QRT of this institute after its establishment. The other members of the team included : Dr. K.E. Lawande, Ex Vice Chancellor; Dr. Dalip Kumar, Ex Director CIFE, Mumbai; Dr. K.C. Bansal, Ex-Director, NBPGR, New Delhi; Dr. Rajinder Singh, Registrar, PAU, Ludhiana; Dr. GGSN Rao, Ex PC, Agro meteorology and Dr. Jogeshwar Singh, Principal Scientist, NIASM, Baramati.

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TAAS Vice Chairman

The Trust for Advancement of Agricultural Sciences (TAAS), New Delhi, Chairman Dr. R.S.Paroda, Ex- Secretary DARE and DG, ICAR and other Board Members nominated Dr. Gurbachan Singh as Vice-Chairman of the trust. The TAAS Board in addition to Dr. Paroda and Gurbachan Singh included : Madam Rita Sharma (Ex-Secretary, Govt. of India), Dr. Trilochan Mahapatra (Secretary, DARE and DG, ICAR); Dr. K.L. Chadha (Ex DDG, Horticulture); Dr. A.K. Srivastava (Member, ASRB); Dr. N.N. Singh (Ex Vice Chancellor); Dr. J.L. Karihaloo (Former Coordinator, Asia-Pacific Association of Agricultural Research Institutions); Dr. A.K. Singh (Director, IARI); Dr. Narendra Gupta and Mr. Raju Barwale (MAHYCO). The Trust under the visionary leadership of Dr. R.S.Paroda organizes workshops, conferences, brain storming sessions on topical subjects of agriculture and publishes proceedings for implementation by the research and education managers and policy makers/advocaters.

Karnal District Agricultural Council (KDAC)

The Indian Council for Food and Agriculture (ICFA), New Delhi is in the process of establishing state and district level Councils to link farmers with latest agricultural technologies and innovations to improve their income and livelihood. ICFA established its first district level Council for Lakhimpur district (UP). The second agriculture council for Karnal District was established during a special function organized by ICFA to honor progressive farmers at CSSRI, Karnal. Hon'ble Chief Minister of Haryana, Sh. Manohar lal graced the occasion as chief guest and Minister of Agriculture and Farmers Welfare presided. Dr. Gurbachan Singh was nominated as Chairman of KDAC, by the Hon'ble Chief Minister and Chairman of ICFA Mr. M.J.Khan

Honorable Chief Minister of Haryana Sh. Manohar LAl Ji honouring the chairman during launch function of KDAC. Also seen in the picture are : Shri O.P.Dhankar honorable Minister of Agriculture and Farmers Welfare, Haryana; Dr. M.J.Khan, Chairman, ICFA, New Delhi, Dr. P.C.Sharma, Director, CSSRI, Karnal and Mayor of Karnal Madam Renu Bala Gupta Ji.

Distinguished Visitors

Dr. S.S.Sandhu

Dr. Sadhu Singh Sandhu, Ex Alumni of CSSRI, Karnal and now settled in Virginia, USA and working as solid waste management engineer visited GSF headquater and research centre on July 28,2018. He was accompanied by his wife and Dr. Sandhu visited both the educational institutes being run by the Adarsh group at Karnal and lauded the initiative of the Group in establishing GSF for further expansion of research, education and development activities

Dr. Nirmal Tej Singh

Dr. Nirmal Tej Singh, Distinguished Fellow, Indian National Science Academy (INSA) and Former Director, CSSRI, Karnal and CARI, Portblair and now settled in California, USA paid a brief visit to GSF Research and Education Centre on 25th July, 2018. He had a long discussion with the Founder Chairman of GSF and appreciated the research and education infrastructure being developed for initiating problem solving quality research. Dr. Singh took a round of the farm and visited experiments on evaluation of rice varieties, integrated farming system, residue management, crop diversification, seed production plots etc.

Dr. R.S.Paroda

Dr. R.S.Paroda, Chairman, Trust for Advancement of Agricultural Sciences (TAAS), New Delhi and Ex-Secretary, Department of Agricultural Research and Education (DARE) and Director General, ICAR visited GSF headquater alongwith his wife Dr. Shashi Paroda Ji on June 6, 2018. The chairperson of Adarsh Education Group Madam Harjit Kaur welcomed Dr. R.S.Paroda and Madam Shashi Paroda ji and briefed them about programmes and activities of the Adarsh group. lateron, both dignitaries visited Adarsh and Montfort World School and had discussion with MD's of both the schools. Both dignitaries were highly appreciative of the contributions of Adarsh group in promoting quality school education in the region. Dr. Paroda desired that under the banner of GSF foundation an agricultural college may be established as this area lacks such facilities.

Dr. G.S. Khush

Dr. Gurdev Khush, Ex Head, Genetics and Plant Breeding, IRRI, Philippines and currently Adjunct Professor, University of California, Devis; considered as father of rice research in the world visited GSF headquater and research and education centre on March 3, 2018. He was accompanied by his wife and Dr. Khush lauded the efforts of the family in establishing state of the art two schools which are providing quality education to the children of Karnal and adjoining villages. They were highly impressed seeing school infrastructure, class rooms, laboratories, libraries and teaching tools and student-teacher-parent counseling schedules. Dr. Khush, while visiting the GSF experimental farm suggested several opportunities of working with

national and international systems of research, education and development.

Publications

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