FAI Activities

Group Discussion on Operation & Maintenance Problems of Ammonia Plants

FAI organized a Group Discussion on the Operation and Maintenance Problems of Ammonia Plants during September 6-8, 2018 at NFL-Bathinda. The three- day programme was inaugurated by Mr. Manoj Mishra, Chairman and Managing Director, National Fertilizers Limited (NFL) and Co-Chairman, FAI. Dr. S. Nand, Deputy Director General, FAI delivered the Key-note address. Mr. A. K. Jain, General Manager (I/C) and Mr. Jagdeep Shah Singh, General Manager (O&M), NFL, Bathinda were also present on the ocassion. The programme was attended by 56 participants from 25 Ammonia plants across India.

Mr. Manoj Mishra lighting the lamp at the inaugural session. Others seen are (L-R) : Mr. Jagdeep Shah Singh, Dr. S. Nand, Mr. A.K. Jain, Mr. Manish Goswami and Mr. H.K. Varshney

Mr. Manoj Mishra in his address, informed that NFL-Bathinda plant is more than 40 years old and still running above 100% capacity. The plant changed its feedstock from fuel oil to natural gas in 2013. He further highlighted some of the challenges being faced by the industry during last couple of years. One of major challenges was 100% *neem* coating of domestic as well as imported urea. This has already been successfully implemented. Introduction of 45 kg bags of urea is the second challenge. There are a lot of issues related to 45 kg bags of urea, not only from technical perspective but also from marketing perspective considering logistics and cost. It is envisaged that introduction of 45 kg bags of urea would result in reduction of around 10% in urea consumption.

He mentioned that there would be massive investment of Rs.30-40,000 crores in urea sector. Some amount has already been invested in Matix, Chambal-III and Ramagundam. He informed that NFL too has 26% equity in Ramagundam plant. Three more plants would be coming up at Gorakhpur, Sindri and Barauni. Contracts have been already awarded for these plants and are expected to be commissioned in next few years. This would result in extra production of around 80 lakh tonnes of urea. Currently, India is importing about 60 lakh tonnes of urea and consumption is around 300 lakh tonnes. The consumption of urea is expected to remain constant because of introduction of 45 kg bags and *neem* coating. He cautioned that if all capacity comes up and urea consumption remains constant, then, there will be problem of handling that extra material as India would not be able to export because of high cost. Secondly, the extra production would be at the high efficiency. This may further pose threat to production beyond 100% for reassessed capacity for less efficient plants.

Mr. Manoj Mishra delivering the inaugural address

Mr. Mishra expressed that the fourth challenge has arisen due to pan India roll out of DBT. The present DBT is not real DBT as there is no direct benefit subsidy to the farmers. However, this has fundamentally altered the business model. Manufacturing Units have to produce continuously. Industry now has to incur more expenses due to increase in working capital requirement from 45 days to 6 months. This has added around Rs. 50-60 crores of interest burden for NFL plants. He also pointed out some of the problems in implementation of DBT. The eligibility of getting subsidy depends on sale of fertilizer through POS machines to the farmer. However, lot of sales are not being routed through POS machines. He expressed that in the present mode, there is no incentive for the retailer and farmer for adopting new system. He suggested that for effective implementation, retailer should also get some incentive to route sales through POS machines.

Mr. Mishra also touched upon briefly the situation of P&K sector where subsidy accounts for 30% of total cost. However, the sector is reeling under constraints due to problems in claiming of input tax credit, soaring raw materials & intermediate prices, etc. This is affecting the viability of P&K sector.

Mr. Manoj Mishra with Participants, Senior officials of NFL, Bathinda and FAI officials

He expressed that operation and maintenance is not only a technical aspect, but more importantly a cultural phenomenon. It is of prime importance to maintain the health of machines for attaining smooth operation of the plant. He further mentioned that a good maintenance culture helps in increasing the productivity, reducing the cost of repairs, saving time and resources. He emphasized that in modern economy, the goal should be to manufacture a quality product at minimum/optimized cost which has to be achieved by sustained and efficient running of plants. He conveyed his best wishes to the participants for a fruitful interaction and learning from the Group Discussion.

Earlier, Dr. S. Nand in his key-note address highlighted various phases of developments in technology in ammonia plants in India. He mentioned that during the initial phase, there was lack of availability of foreign currency. Therefore, there was great emphasis on indigenous ammonia. India built up engineering capability to manufacture large sized static equipments and rotating machines. In case of ammonia plants, there were frequent shutdown due to poor reliability of equipments. Therefore, the focus remained on running plants at reasonable capacity utilization. During this phase, plants implemented measures such as conversion of axial synthesis reactor to axial radial configuration; recovery of purge gas by installing purge gas recovery unit which resulted in saving of 0.2-0.25 Gcal/MT NH_3 and waste heat recovery from flue gases.

In the second phase of development focus shifted to efficiency. Plants upgraded the reformer tubes with better metallurgy thinner tubes. This provided higher volume and thus processing of more gas. In 1990s, plants improved CO_2 removal system by using better solvent and packing in tower. Heat recovery from convection section of primary reformer by installing air pre-heater was carried out by many plants. The plant also focused on water conservation. The old plants installed waste water treatment system and utilized treated water as makeup in cooling water and later as boiler feed water.

The third phase remained focused on energy conservation and reliability. A number of measures included installation of molecular sieve dryer and ammonia wash unit to remove moisture from syn gas, LT shift guard to reduce to CO slip, use of low grade heat by installing vapour absorption refrigeration system to cool synthesis gas, reduction in pressure drop by using improved catalysts, etc. A number of plants carried out debottlenecking of capacity as well as implemented schemes to improve energy efficiency. The operating philosophy was changed for smaller drive from steam to power as smaller drives were more efficient when driven in power mode. The optimization of S/C ratio and use of DCS/ APC for better control on variation in operating parameters also helped in improving efficiency and reliability in ammonia plants.

Dr. Nand mentioned that all such measures have helped in improving the energy efficiency of ammonia plant. He cited that about 7 plants in India are operating at energy level of 7.5 Gcal/MT NH_3 and plants of 1980s are in range of 7.5 – 8.0 Gcal/MT NH_3.

Dr. Nand informed in brief about the activities of Association. He mentioned that FAI organizes a large number of training programmes. He outlined the importance of documentation of schemes and lack of awareness in intellectual property and patents. He mentioned that documentation helps in claiming credit for a scheme implemented by plant. FAI brings out a monthly Journal that covers case studies implemented by plants and participants may publish such articles in the FAI Journal.

He informed that FAI has been interacting with regulators for issues related to feedstock, environment and energy. FAI has been representing to the Government to maintain priority in allocation of domestic gas to fertilizer sector *via-a-vis* power & other sectors. In recent time, there has been depletion of domestic gas. This has resulted in increased use

of high cost imported gas which is affecting the working capital requirement of the companies. FAI has been requesting the Government to allocate additional domestic gas to fertilizer sector from new gas fields.

He further cited the problems being faced by industry on environment regulations due to online monitoring of emissions and effluents and plastic waste management rules. He mentioned that the fertilizer sector has been notified under Energy Conservation Act and included under Perform Achieve and Trade (PAT) scheme of Bureau of Energy Efficiency (BEE). There are issues for meeting the energy saving targets in second PAT cycle. He mentioned that PAT scheme has been initiated to bring energy efficiency in industrial sector. However, in case of fertilizer industry, pricing policy is the major driver for energy saving.

Dr. Nand expressed that there is about 1000 years of cumulative experience gathered for the Group Discussion. Exchange of information would provide immense benefit to the participants. At the end, he thanked NFL for providing facilities to host the Group Discussion and appreciated the efforts made by all concerned at NFL, Bathinda.

Earlier, Mr. A. K. Jain welcomed the chief guests and participants. He informed that NFL is a vintage plant and has been operational since 1979 due to excellent maintenance practices adopted by the unit. The plant is continuously running on more than 100% capacity since last 4 decades. He further informed that Bathinda plant has undergone major technological changes including changeover of feedstock from LSHS to natural gas. Mr. Jain pointed out that urea manufacturing is highly energy intensive process. The profitability of manufacturer of urea depends on consumption of energy per tonne of urea. Ammonia accounts for 80% of urea energy consumption. The lower energy consumption can be achieved by running the plant at optimum process parameters with sustained uninterrupted operation. Being a vintage plant, maintenance of the plant is of utmost important to keep the plant running efficiently. He mentioned that that the agenda of the 3 days' group discussion is to assess and help to solve problems related to operations and maintenance. The participants should derive benefit from the discussion.

Mr. Pushp Kumar, Chief Manger (Mechanical), NFL-Bathinda coordinated the inaugural session. Mr. Manish Goswami, Chief (Technical), FAI, New Delhi expressed gratitude to Mr. Manoj Mishra for inaugurating the Group Discussion and Dr. S. Nand for delivering key-note address. He thanked all the officers of NFL and participants present during inaugural session. He also thanked NFL for hosting the Group Discussion and appreciated efforts of NFL personnel involved with the organization of Group Discussion.

The Group Discussion was divided into six sessions namely, Problems in Hydrogen Generating Section; Problems in Purification Section; Synthesis Section and Storage; Problems in Rotating Machines; Problems on Plant Maintenance, Control System & Safety; Discussion on Energy Saving Measures, Catalyst Performance and Optimization. The sessions were chaired by Dr. S. Nand, Mr. A. K. Jain, Mr. J. Shah Singh, Mr. K.K. Goel, GM (Tech.), NFL-Noida, Mr. I.P Singh, DGM(Mechanical), NFL-Bathinda and Ms. Gurinderjit Kaur, DGM(TS), NFL- Bathinda. A presentation on "Efficiency Improvement at NFL Bathinda" was made by Mr. Manoj Kumar Behere, Manager (Production), NFL-Bathinda. He highlighted the features of plants; challenges faced by NFL-Bathinda after feedstock changeover and performance of the ammonia & urea plants.

Participants also visited the ammonia and urea plants of NFL, Bathinda and appreciated the good housekeeping by the plant.

At the conclusion, Mr. D. S. Ahuja, Director (Technical), NFL, Noida in his valedictory address congratulated FAI and NFL, Bathinda team for organizing the Group Discussion in a meticulous manner. Mr. Ahuja mentioned that India is an agrarian state and fertilizer plays an important role in feeding around 130 crores population of India. There are 31 urea plants in operation (28 gas based and 3 naphtha based) having capacity of about 22 million metric tonnes per annum of urea. He further informed that he joined NFL in 1980 as Jr. Executive trainee at Bathinda unit. At that time, plant was just commissioned and it was under stabilization. The plant was facing lot of teething problems and could achieve 60% capacity utilisation after three years of struggle. At that time, energy consumption and cost were not a matter of concern. The plant was on partial oxidation of oil and calculation of specific consumption

Mr. D.S. Ahuja delivering the valedictory address. Others seen are (L-R): Mr. Jagdeep Shah Singh, Mr. A.K. Jain, Mr. K.K. Goel and Mr. Manish Goswami

was very complicated. Energy consumption of ammonia, urea & off sites were calculated for individual plants which resulted in significant unaccounted energy. Later on energy reporting system was streamlined. Mr. Ahuja mentioned that under the present policy norms energy is utmost important for any plant. New plants including RFCL and 3 plants of HURL will have energy consumption of 5.0 Gcal/MT of urea.

He informed that there was a time when it used to take 3 days for startup and 3 days for the shutdown of the of the plants. During the course of time, things have evolved, systems have been streamlined, operation and maintenance techniques have become more efficient and reliable. Earlier, even if a screw compressor in the plant used to trip, the complete plant had to be stopped. Later on, several modifications were carried out to improve reliability of plant such as change of refrigeration compressor, commissioning of captive power plant, improvement in cooling water treatment plant and installation of efficient heat exchangers.

He suggested that operation and maintenance personnel should share their experience and problems with the original equipment manufacturer or process licenser so that they can take feedback to improve the systems & process technology. He emphasized that reliability is very important for achieving goals. Thus, appropriate maintenance techniques should be practiced and better operational philosophy be adopted. He advised the participants to continue to share their experiences with the fellow participants, keep on analyzing the problems and involve team in solving problems.

Earlier, Mr. A. K. Jain welcomed Mr. Ahuja. He mentioned that the Group Discussion has reached to a conclusion and hoped that discussions were fruitful and participants may be able to find solutions to many of their problems.

Mr. Manish Goswami presented a vote of thanks at the conclusion of the Group Discussion. He thanked Mr. D.S. Ahuja for addressing the participants. He also thanked all Chairpersons of the sessions and participants for their active contribution. He thanked NFL Management and all their executives involved with making arrangements for the programme.

Training Programme on Challenges and Strategies for Fertilizer Industry

The Fertiliser Association of India - Northern Region (FAI-NR) organized a training programme on "Challenges and Strategies for Fertilizer Industry" during September 12-15, 2018 at Kufri, Himachal Pradesh. Sixty-six participants from eighteen companies attended the programme. The training programme was inaugurated by Mr. Arun K. Gupta, Managing Director, Hindustan Urvarak & Rasayan Limited (HURL), New Delhi. Mr. Ashutosh Arora, General Manager (Finance), National Fertilizers Limited (NFL), Noida and Dr. D.S. Yadav, Director (Marketing), FAI, New Delhi were also present.

Mr. Arun K. Gupta lighting the lamp at the inaugural session

In his inaugural address, Mr. Arun K. Gupta said that it was his privilege to be in the midst of executives representing various disciplines of the fertilizer sector. The programme was also an opportunity for him to learn more about various functional areas of the fertilizer industry.

Regarding the need of revival of closed plants or set-up of new plants of ammonia - urea, Mr. Gupta gave an overview of the wide gap in demand: supply situation of urea in the country. He pointed out that the country continues to depend on imported urea to a great extent to meet its demand. No new urea plants came in the country for the last 20 years. Therefore a need was felt to have new ammonia – urea plants to meet urea demand from indigenous production.

Mr. Gupta informed that HURL was formed in June, 2016 - a joint venture fertilizer company of Indian Oil Company (IOC), Coal India Limited (CIL) and NTPC Limited, Fertilizer Corporation of India (FCIL) and Hindustan Fertilizer Corporation Limited (HFCL). The first three companies are amongst top Maharatna public sector undertaking of Government of India. The foundation stone of the Gorakhpur fertilizer project was laid by the Hon'ble Prime Minister of India on 22nd July, 2016. He gave the status of the progress of the

Mr. Arun K. Gupta with participants, faculty and FAI officials

projects of ammonia (each of 2200 MTPD) and *neem* coated urea plants (each of 3850 MTPD) at Gorakhpur (Uttar Pradesh), Sindri (Jharkhand) and Barauni (Bihar). All the three projects are awarded on Lump Sum Turn Key (LSTK) basis with completion schedule of 36 months. He stated that the projects are progressing very fast to meet the dead line. The total financial implication for construction of these 3 plants will be around Rs. 21000 crores. He thanked Government of India for giving interest free loan of Rs. 1200 crores to HURL. He was confident that Banks will finance these projects shortly on a better debt equity ratio. The work for construction of the project at Gorakhpur was given to Toyo Engineering India Private Limited in February 2018. The contract for Sindri and Barauni projects has been awarded to consortium of M/s Technip and M/s L&T in May 2018. The progress of the projects is being reviewed by the NITI Aayog, Department of Fertilizers and PMO on regular basis. HURL team is fully dedicated to meet the challenges to be faced in construction of these plants. He further mentioned that the company is getting full support from Government of India, State Governments and all other stakeholders and HURL team is committed to complete the projects within the stipulated timelines and go on to commercial production in early 2021.

In the end, he wished the programme a success and also requested FAI to prepare a compendium of best practices adopted by different fertilizer companies in areas of Operation & Maintenance, Marketing, Efficiency and Safety etc. This shall be useful to all the participating industries and also bring unity amongst the entire fraternity.

Earlier in his welcome address, Dr. D.S. Yadav explained the objectives of the programme and briefed about the course content to be covered by the resource persons. Dr. Yadav mentioned that the programme will cover challenges being faced by the fertilizer sector in the areas of policy, DBT, GST, logistics, marketing, use and port operations and strategies to be adopted to meet the challenges. He also stated that the special lectures on inter-personal skills, time management, effective leadership, team building and stress management by an expert in the field will be helpful in improving personal effectiveness. Dr. Yadav also gave an overview of the organizational structure of FAI and apprised the participants about the activities and training programmes organized and different publications brought out by the Association. He also appealed the participants to become professional members of the FAI to benefit from the activities of the FAI.

Mr. Harinder Kaushik, Officer, FAI-NR, New Delhi proposed a vote of thanks to the Chief Guest, invitees, faculty and participants..

The four day residential training programme covered important topics namely 'Issues of Indian Urea Industry' and 'Implication of

Dr. D.S. Yadav giving certificate to a participant

GST for Fertilizer Sector' by Mr. Ashutosh Arora, General Manager (Finance), national Fertilizers Limited (NFL), Noida; 'Integrated Fertilizer Management System, RO Module and DBT in Fertilizer Sector – Present Status and Future Strategies' by Mr. S. Kundu, Head (Corporate Affairs), Adventz Group, Gurugram; 'Fertilizer and Raw Material Scenario and Challenges in Fertilizer Marketing', 'Production, Consumption and Marketing of Specialty Fertilizers', 'Policy Environment for Decontrolled P&K Fertilizers' and 'Salient Features of Fertilizer Control Order (FCO) 1985' by Dr. D.S. Yadav; 'Efficient Nutrient Management for Sustainable Agriculture' by Dr. K.K. Singh, Operational Head – Agri-services, Adventz Group, Pune; 'Effective Fertilizer Marketing Strategies in Changing Environment' by Mr. T.S. Rao, General Manager (Marketing), KRIBHCO, Noida; 'Cost Optimization in Logistics Operations' by Mr. Anil Motsara, General Manager (Marketing), NFL, Noida; 'International Trade and Port Operations' by Dr. Satish Maheshwari, former General Manger, KRIBHCO & Consultant, NFL, Noida; 'Improving Productivity and Cost Optimisation in Urea Plants' by Mr. Piyush Misra, Joint General Manager (Technical), IFFCO, New Delhi; and 'Enhancing Efficiency of Phosphatic Fertilizer Plants' by Mr. C. Santosh, Joint General Manager (Technical Services), IFFCO, Paradeep.

In additional to improve professional competence, the topics to enhance personal effectiveness through soft skills for success such as Interpersonal Skills, Time Management, Effective Leadership, Team Building and Stress Management' were dwelt upon by Mr. Kumar Saurabh, Director, Leaderz Walk Life Skills Education, Noida.

Dr. D.S. Yadav distributed certificates to the participants at successful completion of the programme. On behalf of the participants, Mr. Piyush Misra shared his views about the programme and appreciated the course content and contribution of resource persons of the programme. Participants found the programme very useful and educative. Mr. Harinder Kaushik proposed a formal vote of thanks.

Integrated Nutrient Management for Sustaining Soil Health

The Fertiliser Association of India - Southern Region (FAI-SR), Chennai organized a Training Programme on "Integrated Nutrient Management (INM) for Sustaining Soil Health" at Regional Agricultural Research Station (RARS), Polasa, Near Jagtial in Telangana State on 29th August 2018. Dr. S. Saiprasad, Divisional Agronomist, Coromandel International Ltd. inaugurated the programme. Dr. B. Raju and Dr. P. Ravi, Scientists (Soil Science) from RARS participated in the inaugural session of the programme. One hundred fourteen participants comprising of fertilizer dealers, cooperative societies' sales personnel, progressive farmers, and front line extension personnel from fertilizer industry attended the training programme.

Dr. S. Saiprasad delivering the inaugural address

In his inaugural address Dr. Saiprasad stated that soil is critical to crop production as it provides plants with anchorage, water and nutrients. He said that certain quantities of mineral and organic nutrient sources are present in soils, but these often have to be supplemented with external applications for better plant growth. Fertilizers enhance soil fertility and are applied to promote plant growth, improve crop yields and support agricultural intensification. Dr. Saiprasad emphasized that the optimum and balanced use of nutrient inputs from mineral fertilizers is of fundamental importance to meet the ever-growing demand for food. He stated that the use of mineral fertilizers has increased the foodgrain production almost four-fold since 1960 and has been able to meet the food requirements of ever-increasing population. He called upon all the stakeholders to promote efficient use of all nutrient sources, including organic sources, recyclable wastes, mineral fertilizers and biofertilizers, following the integrated nutrient management strategy.

In his special address Dr. B. Raju, Scientist, RARS stated that the integrated nutrient management is designed specifically to integrate the use of natural and man-made soil nutrients to increase crop productivity and preserve soil productivity for future generations. He added that instead of focusing on nutrient management practices for one crop, INM aims at optimal use of nutrient sources on a cropping-

system or crop-rotation/sequence basis. He expressed confidence that this encourages the farmers to focus on long-term planning and give greater consideration for possible environmental impacts.

Earlier Mr. Y.V.N. Murthy, Regional Head, FAI-SR welcomed the participants, faculties and dignitaries to the programme and explained the objectives of the programme. He informed the trainees that fertilizer dealers, progressive farmers and front line extension officials are the key personnel who play a major role in the transfer of latest agricultural technologies to the farmers. He said that in the current agricultural scenario it is of paramount importance to protect the soil health for sustaining crop productivity on a continuous basis. Mr. Murthy stated that integrated plant nutrient management (IPNM) aims to optimize the condition of the soil, with regard to its physical, chemical, biological and hydrological properties, for the purpose of enhancing farm productivity, whilst minimizing land degradation. There is more awareness now than ever before that IPNM not only provides tangible benefits in terms of higher yields, but simultaneously and almost imperceptibly conserves the soil resource as well. He informed the audience that INM would include the use of farmyard manure, natural and mineral fertilizers, soil amendments, crop residues and farm wastes, agroforestry, tillage practices, green manures, cover crops, legumes, intercropping, crop rotations plus a variety of other agronomic, vegetative and structural measures designed to conserve both water and soil. He requested all the participants to disseminate the knowledge gained by them in this programme to their fellow farmers who have not been able to attend the programme.

Topics covered in the training programme included: Critical Role and Importance of Soil Testing in Sustaining the Soil Health by Dr. P. Ravi; Integrated Nutrient Management by Dr. B. Raju; Direct Benefit Transfer (DBT) of Fertiliser Subsidy by Mr. Y.V.N. Murthy; Fertigation for Enhancing the Fertilizer and Water Use Efficiency by Mr. Syed Razak, Consultant, Greenstar Fertilizers Ltd, Hyderabad; and Organic Fertilisers – Key to Soil Health by Dr. S. Saiprasad; Initiatives of Fertilizer Industry in Sustaining the Soil Health by Mr. N. Krishnamacharyulu, Senior Manager (Marketing), RCF Ltd, Hyderabad.

At the end of the programme fertilizer dealer Mr. M. Venkateshwar, M/s Maheswara Fertilisers, Metpally thanked FAI for organizing a very useful programme which helped them in understanding various aspects of INM in sustaining soil health. Mr. Y.V.N. Murthy, thanked the RARS Management, member companies and faculty for their support in organizing the training programme.

Fertiliser Orientation Course

The Fertiliser Association of India-Southern Region (FAI-SR) organized a Fertilizer Orientation Course at Agricultural College, Jagtial, Telangana State of Professor Jaysankar Telangana State Agricultural University, on 28th August, 2018. Programme attended by 58 students was inaugurated by Dr. Ms. G. Padmaja, Dean of the College.

Dr. G. Padmaja at the inaugural session in the Industry and FAI officials

In her inaugural address, Dr. Padmaja stated that the fertilizer use is essential in modern agriculture to sustain and ensure food and nutritional security for the mankind. In the past, increasing the productivity of the crops was the primary focus. She emphasized that in the current scenario, sustainable intensification without damaging the soil's capacity to produce higher yields assumed greater significance in view of the limited potential to bring more land under cultivation and ever-increasing population growth. She mentioned that the ability of the world to feed itself will be threatened unless there is a concerted effort to restore, conserve and manage the existing agro-ecosystems in a sustainable way. She went on to add that challenges are enormous and multifaceted, considering that the global soil health is already overstretched and exacerbated by the burgeoning threats posed by climate change. Dr. Padmaja stated that the balanced application of nutrients based on the soil test recommendations for different crops grown in an area making integrated use of organic and inorganic sources arrived holds the key for sustenance of soil health. She stressed on the need for maintenance of soil quality and health through best management practices. Dr. Padmaja thanked FAI management for organizing the

Fertilizer Orientation Course

The Fertiliser Association of India - Northern region (FAI-NR), New Delhi organized a Fertilizer Orientation Course at the General Shivdev Singh Diwan Gurbachan Singh (GSSDGS) Khalsa College, Patiala, Punjab on 31st August, 2018. One hundred twenty-six under-graduate and post-graduate students attended the course. Dr. D.S. Ubha, Principal of the College was chief guest at the inaugural ceremony. Programme started with the lighting of lamp by Dr. Ubha.

Dr. D.S. Ubha lighting the lamp at inaugural session

In his inaugural address, Dr. D.S. Ubha complimented FAI for organizing such courses in agricultural universities/colleges across the country and thanked the FAI-NR to organize the same at this college. He was confident that the course will provide a platform to the students to interact with the resource persons of the fertilizer companies and faculty of the college. He was emphatic that such course and interactions empower the students to handle farmers' problems with more ease and confidence. Further the course Fertiliser Orientation Course for the first time in this college located at a remote place of Telangana State. She advised the students to be very attentive during the technical sessions and gain maximum knowledge from the learned faculty of fertilizer industry and make gainful use of the golden opportunity provided by FAI.

Earlier Mr. Y.V.N. Murthy, Regional Head, FAI-SR, Chennai welcomed the dignitaries, college faculty and students and explained to them the objectives of organizing the course. He informed the audience that the faculty drawn from the fertilizer industry would explain to them in detail on practical aspects of fertilizer production, logistics, distribution, marketing of fertilizers through various net-works, promotional programmes for educating the farmers on balanced use of nutrients, handling of imported fertilizers at the ports and job opportunities for agriculture graduates, etc. He informed that soil health is affected both by abysmally low as well as abnormally high nutrient application rates. He stated that the imbalanced application of nutrients leads to depletion of those nutrients not included in fertilization schedule and also catalyzes degradation due to reduction in soil organic matter content. Mr. Murthy added that improvement in soil health in terms of soil organic matter content and supply of various micronutrients is possible only when farmers apply organic nutrient sources such as manures and crop residues available on the farm and supplement them with mineral fertilizers to achieve the yield goals. He said that since urea is available at a very low rate compared to other fertilizers, farmers are using more urea and neglecting the use of other nutrients. He underlined that there is an urgent need for applying corrections in the prices of fertilizers so as to make other major, secondary and micro nutrients-carrying fertilizers available to the farmers at the affordable rates and this needs to be done at the earliest to ensure balanced application of nutrients which is the only prescription for sustaining the soil health.

Mr. Murthy updated the participants on the activities of FAI and its member companies in sustaining soil health and improving farm productivity. He informed the audience that FAI through its popular journals and publications has been bringing awareness on sustaining soil health among all the stake-holders. Topics covered in the orientation course included Fertilizer Manufacturing Process, Fertilizer Scenario and Policy by Mr. Y.V.N. Murthy; Distribution of Fertilizers by Mr. N. Krishnamacharyulu, Senior Manager (Marketing), RCF Limited, Hyderabad; Dealer Network Appointment and Market Development Activities by Mr. S. Saiprasad, Divisional Agronomist, Coromandel International Limited, Vijayawada; Fertilizer Imports by G. Rambabu, Chief Manager (Marketing), Indian Potash Limied, Hyderabad; Water Soluble and Organic Fertilizers by Mr. Syed Razak, Consultant, Greenstar Fertilizers Limited, Hyderabad; Marketing Research as a Tool for Predicting Demand by Mr. S.J. Basha, Deputy General Manager (Marketing), Nagarjuna Fertilizers & Chemicals Limited, Hyderabad; and Legal Aspects of Fertilizer Marketing and Job Opportunities for Agriculture Graduates in Fertilizer Industry by Mr. Y.V.N. Murthy.

Programme came to a close by formal vote of thanks by Dr. A. Krishna Chaitanya, Assistant Professor, Soil Science and Agricultural Chemistry of the College.

Dr. D.S. Yadav presenting FAI publications to Mr. Simranpreet Singh Bola, winner of the fertilizer quiz. Others seen are (L-R) : Mr. Harinder Kaushik, Mr. Hansbir Singh, Mr. Shailender Singh, Mr. N.K. Bhadu and Mr. Tejinder Singh

helps students to have better understanding of the fertilizer sector, so vital and essential for the agriculture sector. Dr. Ubha then gave an overview of the stupendous role played by Khalsa College in providing holistic education to students to meet the challenges in various walks of life. He stated that Khalsa college came into existence in 1960 with 35 students only which expanded exponentially to house currently more than 6500 students nurtured and cared by 200 faculty members with supporting staff. He said that the National Assessment and Accreditation Council, Bangalore awarded this institution 'A' grade in 2015, after reaccreditation. In 2016, University Grant Commission, New Delhi gave it the status of 'A' college with potential for excellence and autonomous status. He added that the college is running various programmes including agriculture for the benefit of students and welfare of the state. He proclaimed proudly that in addition to education, the college is having excellent sports facilities and a number of students are getting selected to represent the country at Asian games, etc.

Dr. Ubha covered various areas related to Green Revolution and its impact on agriculture; declining land availability and crop response to fertilizer application; judicious use of fertilizers and irrigation water; soil degradation and sustenance of soil health; crop diversification linked to marketing mechanism; experience of growing tomato for the corporate houses; agriculture credit; evolvement of mechanisms beneficial for both industry and farmers; migration of rural people to cities; lack of interest of the farmers in agriculture; etc. He dwelt upon the reasons of deterioration in soil health. Dr. Ubha concluded his address by saying that soil health has to be sustained to meet the demand of food, fiber and fuel of the burgeoning population.

Earlier in his welcome address, Dr. D.S. Yadav, Director (Marketing), FAI, New Delhi briefed the audience about and objectives of the programme, FAI and its activities. He stated that such courses are organized by the Association across the length and breadth of the country to create awareness related to the fertilizer sector among the students of the agricultural universities/colleges. He cited statistics to support his contention on many areas related to production, import and consumption of fertilizers *vis-à-vis* food grain production and use of fertilizer on unit area basis in Patiala, Punjab and India; agri-network set-up in the state of Punjab; and changes in fertilizer policies from time to time; direct benefit transfer (DBT) of fertilizer in fertilizer sector; Fertilizer (Control) Order 1985, etc. He said that the declining crop response to fertilizer application is a cause of serious concern and all of us having concern on this have to convince and make the farming community to adopt integrated nutrient management approach to bring about improvement in crop response to fertilizer application. He gave useful tips to the students on attaining excellence in life and advised them to pursue their studies seriously. In his concluding remarks, Dr. Yadav stated that good employment opportunities exist in agriculture and the same can be tapped by acquiring pertinent knowledge of the agriculture and fertilizer sectors.

Presentations made in the training programme included Fertilizer Scenario in India; and Fertilizer Use and Environmental Quality: Myths and Realities by Dr. D.S. Yadav; Efficient Nutrient Management and Balanced Fertilization by Mr. N.K. Bhadu, Additional General Manager (Marketing), KRIBHCO, Noida; Emerging Agri-Business Opportunities by Mr. Shailender Singh, Zonal Head (Marketing), Gujarat State Fertilizers & Chemicals Limited, Chandigarh; and Distribution Channel of Fertilizers in India by Mr. Tejinder Singh, Chief Manager (Marketing), National Fertilizers Limited, Chandigarh. Dr. Yadav also briefed the students about the legal aspects of fertilizer trade and DBT in fertilizer sector.

After the technical sessions, a fertilizer quiz was organized. Winner of the quiz programme Mr. Simranpreet Singh Bola, M.Sc. Agriculture (Agronomy) Part 2 student was awarded the sets of latest FAI publications by Dr. D.S. Yadav.

In concluding session, Professor Rajdeep Singh Dhaliwal, Head, Post Graduate Department of Agriculture, GSSDGS Khalsa college, Patiala thanked the FAI for organizing such a useful programme for the benefit of the

students of the college. On behalf of the students, Mr. Simranpreet Singh Bola shared the trainees' views on the programme, appreciated the course content and complimented the competence of the Faculty of the programme. He stated that the students found this course to be immensely useful and highly educative.

Programme ended with a vote of thanks by Mr. Harinder Kaushik, Officer, FAI-NR, New Delhi. The event was prominently covered by the local press, Patiala.

Dealers Training Programme

The Fertiliser Association of India - Northern region (FAI-NR), New Delhi organized a Dealers Training Programme at Patiala, Punjab on 1st September, 2018. Eighty-two dealers/ agro-retailers/cooperative sales personnel from Patiala, SAS Nagar, Fatehgarh Sahib, Khanna, Amritsar, Bathinda, Sangrur and Ludhiana districts of Punjab participated. Mr. Jasbir Singh Bains, Director of Agriculture, Government of Punjab, SAS Nagar was the chief guest at the inaugural ceremony. Mr. Arvinder Singh, Chief Agriculture Officer, Patiala; Mr. Avninder Singh Mann, Agriculture Development Officer (Enforcement), Patiala; Mr. Gurmail Singh, Mr. Vimalpreet Singh and Mr. Gurmit Singh, Agriculture Development Officers, Patiala; Mr. Shailender Singh, Zonal Head – Marketing, Gujarat State Fertilizers & Chemicals Limited, Chandigarh; and Mr. N.K. Bhadu, Additional General Manager (Marketing), Krishak Bharati Cooperative Limited, Noida graced the inaugural function and the programme. Programme started with lighting of the lamp by the Chief Guest.

Mr. Jasbir Singh Bains lighting the lamp at inaugural session

In his inaugural address, Mr. Jasbir Singh Bains stated that Punjab, a well-developed agricultural state is having 1.5% of the total geographical area of the country. The state contributes about 1/3rd to the central pool for procurement of wheat and rice in the country. The state occupies the first position in productivity (kg ha^{-1}) of different crops and also exports basmati rice to different countries. The increase in average yields of crops has become possible due to increase in use of quality inputs namely fertilizers, seeds and plant care chemicals. In addition, irrigation facilities have also contributed to increase in the yields of crops. Among different production inputs, contribution of fertilizers has been monumental. Mr. Bains updated the dealers about the allocation of different fertilizer products in Punjab for *kharif* and *rabi* seasons in the Zonal Conferences held in New Delhi every year. He added that the supply and issues related to seeds, plant protection and farm machinery are also discussed in the Conferences.

Mr. Bains lauded the efforts made by fertilizer industry, cooperatives and private traders in ensuring availability of fertilizers in every nook and corner of the state for use by the farmers, vital in raising the farm productivity. He stated that the share of cooperative and private trade in sale of fertilizers in Punjab is 52 and 48%, respectively. He said that the consumption of urea, DAP, MOP, NP/NPK complexes and SSP in Punjab during 2017-18 was 2,615,290, 770,900, 1,10,530, 61,690 and 87,800 tonnes, respectively. Mr. Bains stated that Punjab agriculture faced the challenges arising out of dominance of rice-wheat cropping system, increase in cost of cultivation, lack of interest of small and marginal farmers in agriculture, deepening water table in tube well irrigated areas, salinity/alkalinity in canal irrigated areas, etc. and there is a need to take the appropriate technologies to the farmers' fields to mitigate these challenges. Mr. Bains emphasized on the need to bring down the cost of cultivation so as to enable the farmers to optimize net revenues from agriculture. Mr. Bains also covered salient features of Fertiliser (Control) Order 1985 and its legality for the fertilizer dealers to comply with. He then dwelt upon various areas related to direct benefit transfer (DBT) scheme made applicable in the fertilizer sector across the country and sales of fertilizers by the retailers to the beneficiaries through point of sale (POS) machines. He advised the retailers to sell fertilizers to the farmers only through POS machines. He exhorted them to make increasing use of IT through formation of WhatsApp groups in mobile handsets to overcome the problems faced in operation of POS machines. Finally, he urged upon the dealers to take keen interest in the programme.

Earlier, Dr. D.S. Yadav, Director (Marketing), FAI, New Delhi,

Mr. Jasbir Singh Bains giving certificate to a participant

thanked Mr. Jasbir Singh Bains, Director of Agriculture, Government of Punjab, for sparing his valuable time for the programme. Dr. Yadav briefed the audience about the programme and the presentations to be made by the eminent speakers and hoped that the programme will be quite useful to the dealers in smooth running of their business. Dr. Yadav gave an overview of fertilizer policy, change in procedure of disbursement of subsidy, consumption of fertilizers, N:P_2O_5:K_2O use ratio, growing need of balanced fertilization, direct co-relation between fertilizer consumption and food grain production, soil health card scheme, DBT in fertilizer sector, etc. He requested the dealers to keep themselves abreast of the ongoing changes in the fertilizer trade in this era of change and knowledge. He was emphatic that the dealers who acquire knowledge of the trade and update it from time to time and embrace the change, are only able to manage their business well. Dr. Yadav stated that as per the latest guidelines, retailers have to sell fertilizers to the farmers only through POS machines. He concluded his address by providing valuable tips to dealers for betterment of their business.

Six presentations made during the training programme included (i) Important Provisions of FCO, 1985 and ECA, 1955 by Mr. Avninder Singh Mann; (ii) Fertilizer Scenario in India and Punjab and (iii) iFMS and DBT in Fertilizer Sector by Dr. D.S. Yadav; (iv) Role of Dealers in Changing Environment by Mr. Dhir Singh, Zonal Manager (Marketing), National Fertilizers Limited, Chandigarh; (v) Handling and Storage of Fertilizers by Mr. Shailender Singh; and (vi) Efficient Nutrient Management and Balanced Fertilization by Mr. N.K. Bhadu.

In the concluding session, Mr. Jasbir Singh Bains stated that adoption of balanced fertilization inclusive of secondary- and micro-nutrients restores soil health and improves crop productivity and farm income. Towards this, need-based promotional programmes on use of fertilizers on soil test basis by the farmers should be emphasized by all concerned. By doing so, efficiency of fertilizers will also get a boost. Mr. Bains emphasized that there is still a lot of potential to improve productivity of the crops in both productive and non-productive areas and the need of hour is to tap that potential by promoting balanced use of fertilizers, and integrated nutrient management comprising of conjoint use of fertilizers, organic sources and recycling of agricultural wastes, etc. In his concluding remarks, Mr. Bains underlined that crops diversification and value addition of the harvested produce would go a long way in mitigating the challenges currently faced in agriculture and improving the income of the farmers. Mr. Bains distributed certificates to the participants.

Mr. Harinder Kaushik, Officer (FAI-NR), New Delhi proposed a vote of thanks to all the guests, faculty and participants for attending the programme and the fertilizer companies for nominating their dealers/retailers/cooperative sales personnel.

The programme was covered extensively by the local press of Patiala. ■

ATTENTION READERS

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