

**Proceedings  
of  
National Seminar  
On  
Smart Technologies to Boost Farm Profitability and Socio-  
Economic Status of Rural India  
(November 19-20, 2018)**



**Venue**  
**Sher-e-Kashmir University of Agricultural  
Sciences & Technology, Jammu.**



**Organised by**

**Royal Association for Science-led Socio-cultural  
Advancement 28/142 (GF), West Patel Nagar, New Delhi 110008**

**and**

**Sher-e-Kashmir University of Agricultural Sciences and Technology,  
Jammu**

## **Glimpses of RASSA National Seminar Proceeding- 2018**











## **Committee of National Seminar 2018**

### **Patron**

**Prof. (Dr.) Pardeep K. Sharma**  
**Vice Chancellor, SKUAST- Jammu**

### **Convener**

Dr. Jag Paul Sharma (Director Research)  
Dr. K.S. Risam (Director Extension)

### **Co-convener**

Dr. R.K. Arora (Associate Director Extension)  
Dr. Rakesh Nanda (Prof. & Head, Division of Agricultural Extension Education)  
Dr. B.C. Sharma (Prof. & Head, Division of Agronomy)

### **Organizing Chairperson**

Dr. D.P. Abrol, Dean Faculty of Agriculture

### **Co-organizing Chairperson**

Dr. M.S. Bhadwal (I/c Examination Cell Main Campus Chatha)  
Dr. Sushil Sharma (Prof. & Head, Division of Agricultural Engineering)

### **Organizing Secretary**

Dr. Poonam Parihar, (Assistant Professor, Division of Agricultural Extension Education)

### **JOINT ORGANIZING SECRETARY**

Dr. Mithal Jamwal (Sr. Scientist, Regional Horticulture Research Sub- Station, Bhaderwah)  
Dr. A.P. Singh (Sr. Scientist, AICRPDA, Rakh Dhiansar)  
Dr. S.P. Singh (Assistant Professor, Division of Agricultural & ABM)  
Dr. Vikas Sharma (Assistant Professor, Division of Biochemistry)

### **CO-ORGANIZING SECRETARY**

Dr. Vivek Arya (Asstt. Prof., Division of Soil Science & Agril. Chemistry)  
Dr. Sheetal Badyal (  
Dr. Brijishwer Bhau  
Dr. Rajiv Bharat (Jr. Scientist, Division of Plant Breeding & Genetics)  
Dr. J.S. Manhas (Asstt. Prof., Division of Agricultural Extension Education)

### **LOCAL ADVISORY COMMITTEE**

Dr. T.A.S. Ganai, Director Education  
Dr. S.E.H. Rizvi, Dean, FoBSc.  
Dr. M.M.S. Zama, Dean, FVSc. & A.H.  
Dr. Dileep Kachroo, Registrar  
Dr. Deepak Kher, Director, Planning & Monitoring  
Sh. Rajesh Talwar, Comptroller  
Dr. V.K. Razdan, Librarian  
Dr. S.K. Kher, Retd. Prof. & Head, Division of Agricultural Extension Education

### **CORE ORGANIZING COMMITTEE**

Dr. K.K Sood, Prof. & Head, Division of Agro-forestry  
Dr. A.K Razdan, University Librarian

Dr. K.K. Sharma, Prof. & Head, Division of Soil Science and Agricultural Chemistry  
Dr. Anil Gupta, Prof. & Head, Division of Plant Pathology  
Dr. R.K. Bali, Prof. & Head, Division of Sericulture  
Dr. V.K. Wali, Prof. & Head, Division of Fruit Science  
Dr. Hafeez Ahmad, Prof. & Head, Division of Entomology  
Dr. Sanjay Guleria, Prof. & Head, Division of Biochemistry  
Dr. R.K. Salgotra Prof. & Head, School of Biotechnology  
Dr. Anil Sharma, Prof. AICRPDA, Rakh Dhiansar  
Dr. P.S. Slathia, Prof, Division of Agricultural Extension Education  
Dr. Manish Sharma, Prof. Division of Statistics and Computer Science  
Dr. Bharat Bhushan, Joint Registrar  
Dr. Amrish Vaid, P.C,K.V.K. Kathua  
Dr. Vikas Tandon P.C. K.V.K. Rajouri  
Dr. Ajay Gupta, I/C KVK Poonch  
Dr. Vinod Gupta, P.C. KVK Samba  
Dr. Meenakshi Gupta, Assoc. Prof., Division of Agronomy  
Dr. Pyush Sharma, Assoc. Prof., Division of Soil Science and Agricultural Chemistry  
Dr. Jonali Devi, Assoc. Prof., Division of Vet. Physiology & Biochemistry  
Dr. Sharad Kumar, Assoc. Prof., Division of

#### **NATIONAL ADVISORY COMMITTEE**

Prof. Punjab Singh, RASSA and NAAS President, New Delhi  
Prof. Kirti Singh, Former ASRB Chairman, New Delhi  
Er. Awadesh Kumar Singh, President RASSA.  
Prof. N.S. Rathore, DDG(Education),ICAR, New Delhi  
Prof. N.K.Singh, National Professor & BP Paul chair and Director,ICAR-NRCPB,New Delhi  
Prof. Rajesh Singh, Vice-Chancellor, Purnia University Bihar.  
Prof. G.P.Rao, Professor (Virology),ICAR-IARI, New Delhi  
Prof. R.P.Singh, Rector-III,JNU, New Delhi  
Dr.U.S.Goutam,Director,ICAR-ATAARI,Kanpur  
Dr. Anjani Kumar,Director, ICAR-ATAARI,Patna  
Dr. Akarsh Parihar, Assoc. Prof., Division of Plant Breeding and Genetics, AAU



## Proceedings of RASSA National Seminar 2018

Agriculture remains a mainstay for India's rural population that currently constitutes almost 70% of the nation's 1.3 billion mass. Contributing to the more than 58% of the population as the primary source of livelihood, agricultural sector in India nonetheless, is plagued with a variety of problems including the use of outdated equipment, improper infrastructure, and farmers unable to access a wider range of markets. Due to intensive involvement of labour in farm operations, the cost of production of many crops is quite high. However, it is estimated that percentage of agricultural workers in total work force would drop to 25.7% by 2050 from 58.2% in 2001. Thus, there is a need to modernization of agricultural technologies in the country. Technological innovation in agriculture, food manufacturing, energy production, and water conservation by the private and public sectors would be the key drivers of meeting our country's food security as well as international competitiveness in coming days.

One of the more pressing challenges of the sector is renovation and modernization of infrastructure. As per National Institute of Agricultural Management (NIAM), the supply chain management in India is fraught with problems mainly due to the outdated technologies of the agricultural industry. Promises about strengthening financial support to the agrarian community have been dominating India's financial budget plans for years now, but the rural community needs measures that would enhance their market reach and eventually ensure better profit margins. **Prime Minister Narendra Modi's government plans to double Indian farmer's income by 2022, which directly addresses the agrarian crisis in India and paves the way for the introduction of new initiatives to improve a farmer's income.** The farming communities are showing keen interest in modern and precision farm technologies as there is a realisation that it enhances productivity and profitability. There is a noticeable shift towards the 'organised and accountable' rental services from the existing unorganised equipment rental services. Digitisation and increased access to web-enabled services are making it more convenient for farmers to pick and choose their service providers and schedule timely deployment of these 'high technology and precision' equipment.

A renewed effort is needed to develop and deploy advanced technologies *viz.* eco-friendly crop protection methods after much research on products that support organic farming to increase crop produce and quality with minimal expenditure, focuses on increasing soil fertility to achieve higher agricultural productivity and crop yield with lower resource use, improving mechanization at horticulture farms with the use of R&D and high quality farm equipment, provides agri-businesses the technology and expertise to create a smarter and safer food supply for consumers around the world and accelerate the use of technology in animal production. **The RASSA National Seminar on "Smart Technologies to Boost Farm Profitability and Socio-Economic Status of Rural India" is destined to deliberate on intelligent agriculture infrastructure and technologies that leverages grand challenges of meeting our food security and increasing our competitiveness globally. Every possibility to uplift the socio-economic status of Indian farming and rural community will be explored under ten themes covering 42 sub-themes on smart technologies in agricultural and allied sectors in the said National Seminar to be conducted at SKUAST-Jammu Chatha on 19-20<sup>th</sup> November 2018.**

The main focus of RASSA National Seminar-2018 was on Smart Technologies to Boost Farm Profitability and Socio-Economic Status of Rural India. Following sub-themes of the seminar were discussed by presenting papers/discussions with policymakers, scientists, teachers, trainers, industrialists and students from all over the country and the farmers from Jammu province. The State Agricultural Universities as well as traditional universities, KVKs, NGOs, private organizations, NABARD, DST, SICOP, Agro industries, Khadi and Village Industries, JK Bank, PNB, Department of agriculture, horticulture, sericulture, floriculture, animal husbandry, JK Tourism & other different organizations participated in the above said National Seminar. The deliberations were done on following sub-themes:

- Stock taking of extension research
- Sustainable extension approaches for technology delivery
- Strengthening extension education
- ICT and Technology delivery
- Gender and rural youth for sustainable development
- Futuristic challenges and prospects in sustainable agricultural extension.
- Sustainable technologies for enhancing crop productivity
- Organic farming: Challenges and current scenario
- Soil quality and capacity for crop production
- Climate change and natural resource management
- Breeding system modification for sustainable agriculture
- Innovation in plant breeding for food security
- Biotic and abiotic stress management
- Plant health
- Integrated pest and disease management (IPDM)
- Horticulture to ensure food and nutritional security
- Technology advancement in horticulture
- Innovation in food processing
- Nutraceutical and nutritional security
- Food and health defence
- Capacity development, opportunities and micro enterprise development
- Entrepreneurship development models and institutional innovation
- Gender issues and success stories
- Challenges faced by entrepreneurs
- Livestock production: recent trends, future prospects
- Biotechnology options for improving livestock production
- Innovations in animal health
- Advances in animal health technology
- Enhancement of livestock productivity
- Biotechnological interventions in veterinary sciences

- Poultry farming
- Economic education and research for promoting competitiveness in agriculture
- Agricultural policy: implications for food security and self sufficiency
- Trade policy and the competitiveness of Indian agriculture
- Promoting competitiveness through improving farming access to markets
- Green energy, green economy, green business and green computing
- Sustainable agriculture and food security
- Industrialization vs. environment
- Renewable energy for sustainability
- Sustainable business
- Demand driven extension and market led extension
- Contract farming and public private partnership

The Chief Guest of the Seminar was Dr. Nirmal Singh, Speaker J&K State Legislative Assembly. The Guest of honour in the inaugural function was Dr. N.S. Rathore, Deputy Director General (Education), ICAR-New Delhi. Dr. Pardeep Kumar Sharma, Vice-Chancellor, SKUAST-Jammu, Er Awadhesh Kumar Singh, President RASSA, Dr Jag Paul Sharma, Convener of Seminar and Dr. Poonam Parihar, Organizing Secretary of the Seminar also shared the Dias.

While inaugurating the seminar, the Guest of honour Dr. N.S. Rathore said, “On an average, 2090 farmers are leaving farming every day which is a serious issue and needs immediate redressal.” He said that for achieving sustainable profitability in farming, the policymakers, researcher and extension agencies should lay more emphases on smart technologies which should be specific to area, measurable, attainable, realistic and time-bound (SMART). The chief guest Dr. Nirmal Singh, Speaker J&K State Legislative Assembly addressed 300 plus delegates from across the country and laid emphasis on shifting focus from “agricultural-centric” to “agriculturist-centric” approach for augmenting the low levels of farm income from around 75,000/- per year per farm household. He advised agricultural scientist and extension workers for working in a mission mode and policymakers for providing other economic opportunities to small holder farmers for sustainable livelihood.

Dr. P.K. Sharma, Vice-Chancellor, SKUAST-Jammu said that in the globalization and digital era we should manage information, use decision support system for precision farming and automation to increase input use efficiency which is low in India and more so in the Jammu and Kashmir state.

RASSA President delivered a keynote address in the inaugural function and gave an overview of the objectives of RASSA which aims to achieve synergy between socio-cultural and scientific advancement, especially in view of small landholding in the country. He said villages' prosperity will ensure nation's prosperity.

Dr. J.P. Sharma, convener of the seminar, presented the welcome address. Dr. Poonam Parihar, organizing secretary of the RASSA seminar, presented the formal vote of thanks and informed that the issues raised by the dignitaries will be deliberated upon in the technical sessions of the seminar. The seminar was attended by the statutory officers, HODs and faculty.

The lead Paper session/technical session I was chaired by Dr. Narender Pratap Singh, Director, NIASM, Maharashtra, India and co-chaired by Dr. Awdhesh Kumar Singh, President, RASSA, New Delhi. Dr. D.K. Vatsa, Director Research, CSKHPKV, Palampur, H.P. and Dr. Akarsh Parihar, Associate Research Scientist (PBG), Distant Hybridization Scheme, Centre for Excellence in Biotechnology, AAU, Gujarat presented lead papers on Modern Technologies to boost Farmer's Income of Rural India with Special Reference to Mountain Agriculture and Speed Breeding: A Promising Tool for New Green Revolution respectively.

Technical session II was chaired by Dr. Rakesh Nanda, Head, Division of Agricultural Extension Education, SKUAST-J and co-chaired by Dr. M.S. Nain, Principal Scientist, Division of Agricultural Extension IARI, New Delhi. Dr. Sheetal Badyal, Scientist, KVK- Jammu, SKUAST-J and Dr. J.S. Manhas, Assistant Professor, Division of Agricultural Extension Education, SKUAST-J served as rapporteur of the sessions. Invigorating Transformation of Farm Extension towards Sustainable Development: Futuristic Challenges and Prospects was the theme of respective technical sessions. Some of the speakers were conferred with the Best Oral Presentation Award.

Technical session IV was chaired by Dr. D.P. Abrol, Dean, FoA, SKUAST-J and co-chaired by Dr. Janardan Singh, Former ADR, CSK HPKV, H.P. Dr. Prashant Bakshi, Associate Professor, Division of Fruit Science, SKUAST-J and Dr. Julie Dogra, Associate Professor, Division of Food Science & Technology, Chatha, SKUAST-J served as the rapporteur of the session. Recent development in Horticulture was the theme of the respective technical session.

Technical session V was chaired by Dr. M.M. Zama, Dean, Faculty of Veterinary Science and A.H., SKUAST-J and co-chaired by the Dr. Shiv Pratap Singh, Principal Scientist, Division of Agricultural Engineering, IARI, New Delhi. Dr. Devinder Singh, Assistant Professor, Division of Entomology, SKUAST-J was the convener of respective session. Dr. Jonali Devi, Professor, Division of Entomology, F.V.Sc., SKUAST-J and Dr. B. Brahma, Associate Professor (LPM), F.V.Sc., SKUAST-J was the rapporteur of the respective session. Technical Advances and innovation in livestock and companion animals was the theme of the respective session.

Technical session VII was chaired by Dr. S.E.H. Rizvi, Dean, Faculty of Basic Sciences, SKUAST-J and co-chaired by Dr. B.C. Sharma, Division of Agronomy, SKUAST-J. Dr. Manish Sharma, Professor, Division of Statistics and Computer Science, SKUAST-J was the convener of the session. Dr. P.K. Rai, Senior Scientist, ACHR, Udheywala, SKUAST-J and Dr. Anita Singh, Scientist, DST, Dept. of Crop Improvement, CSK HPKV, H.P. were the rapporteur of the session. Environment and sustainability was the theme of the session.

Technical session VIII was chaired by Dr. Jag Paul Sharma, Director Research, SKUAST-J and co-chaired by Dr. Shalesh Kumar Singh. Deputy Director, NHRDF, New Delhi. Dr. Peeyush Sharma, Associate Professor, Division of Soil Science and Agricultural Chemistry, SKUAST-J was the convener. Dr. Sanjal Khajuria, KVK, Kathua, SKUAST-J and Dr. Anil Bhushan, Jr. Scientist, ACHR, Udheywala, SKUAST-J was the rapporteur of the session. Promoting the competitiveness of Indian Agriculture in a weakened Global Economy was the theme of the respective session.

A farmers-scientist and policy makers interactive meet & farmers Quiz was also held on 2<sup>nd</sup> day of the National Seminar in which more than 70 farmers participated and it was chaired by Dr. R.K. Arora, Associate Director Extension, SKUAST-J and co-chaired by Dr. Arish VAID, Chief Scientist and Head, KVK, Kathua, SKUAST-J. Dr. Vinod Gupta, Senior Scientist and Head, KVK, Samba, SKUAST-J and Dr. Vishal Mahajan, SMS, KVK, Kathua, SKUAST-J were the rapporteur of the session.

Professor S.S Sarangdevot, Vice Chancellor, JRN Rajasthan Vidyapeeth University, Udaipur was the Chief Guest, Dr. Ram Vishwakarma, Director, IIM, Jammu was the Guest of Honour, Professor Rajesh Singh, Vice-Chancellor, Purnea University, Bihar & Sh. Anil

Singh, Executive council member, Lucknow University were the Special guest of the event on 2<sup>nd</sup> day in the Valedictory Function.

Lead papers, oral and poster technical sessions were organized during the seminar on themes including transformation of farm extension towards sustainable development; advances in crop production technologies & natural resource management: crop improvement & protection technology; agripreneurship; environment & sustainability and extension system & policy issues, etc. Scientists, teachers, extension officers, scholars and students from different parts of the country participated in the national seminar with their innovative ideas to meet the objectives of the society. Dr Manoj Dhar, Vice Chancellor, University of Jammu; Prof. Rajesh Singh, Vice Chancellor, Purnea University, Bihar and Dr N P Singh, Director ICAR-NIASM, Baramati, Maharashtra, were among the participants who delivered lead lectures to discuss different smart technology tools to boost farmer's income and socio-economic upliftment. The researchable, developmental and policy recommendations emerged during the seminar were presented by Dr J P Sharma, Director Research, SKUAST-J and Convener of the national seminar. During the seminar, the president of RASSA society, Dr Awadesh K Singh stressed for an integrated approach for overall development of poor farmer community and showed his keen interest for identification and adoption of at least one under-developed and poor village in Jammu region for its socio-economic development, in collaboration with SKUAST-Jammu. Scientists, scholars, students and farmers were conferred with awards under different categories during the valedictory function. Dr Poonam Parihar, organizing secretary of the national seminar presented the vote of thanks.

#### **Award for Young Scientist**

<b>S. No.</b>	<b>Name of Awardee</b>	<b>Discipline</b>
1.	Dr. Rajiv Kumar Singh	Division of Agronomy, ICAR-IARI, New Delhi
2.	Dr. Rajan Bhatt	Regional Reserach Centre, Kapurthala, PAU, Ludhiana
3.	Dr. Pardeep Kumar Singh	Division of Vegetable Sciences, SKUAST-Kashmir
4.	Dr. Mahital Jamwal	Regional Horticulture Research Sub-Station, SKUAST-J, Bhaderwah (Doda), India
5.	Dr. Jasbir Singh Manhas	Division of Agricultural Extension Education, SKUAST-Jammu
6.	Dr. Anil Bhat	Division of Agricultural Economics and ABM, SKUAST-Jammu

### Award for Best Extensionist

S.No.	Name of Awardees	Discipline
1.	Dr. Amit Singh Charak	Scientist (Agronomy), KVK Doda, SKUAST-Jammu
2.	Dr. S. Saravanakumar	Scientist (Agronomy), ICAR-KVK (MYRADA), Tamil Nadu
3.	Dr. M.R.Ananda	Asst. Professor (Agronomy), Dept. of Agronomy, UAS, Bengaluru
4.	Dr. Akshaya Ghintala	SMS, KVK, Hanumangarh
5.	Dr. Rakesh Kumar Singh	SMS, KVK, ICAR-Lucknow
6.	Dr. Poonam Sharma	Associate Professor, Division of FST, SKUAST-Kashmir
7.	Dr. Banarsi Lal	Sr. Scientist-cum-head, KVK, Reasi, SKUAST-Jammu

### Award for Best Researcher

S.No.	Name of Awardees	Discipline
1.	Dr. Shabir Ahmed Lone	ABRC, ICAR-NDRI Karnal
2.	Dr. Sanjeev Kumar Singh	Assistant Chief Technical Officer, ICAR-Pusa Campus, New Delhi
3.	Dr. Mehraj Ud Din Khanday	Senior Scientist, Division of Soil Science and Agril. Chemistry, SKUAST-K
4.	Dr. Meenakshi Raina	Department of Biotechnology, SKUAST-Jammu
5.	Dr. Devesh Kumar	SRF, Division of Agril. Engg, ICAR-IARI, New Delhi
6.	Dr. Aejaz Ahmed Dar	PDF, School of Biotechnology, SKUAST-Jammu

### Award for Innovation

S. No.	Name of Awardee	Discipline
1.	Er. Mukesh Kumar Singh	Farm Machines & Power; (Scientist- On Leave, ICAR-IARI, New Delhi) at Department of FMPE, CTAE, MPUAT Udaipur, (Rajasthan)
2.	Dr. Awani Kumar Singh	Protected Cultivation; Principal Scientist, CPCT-IARI, New Delhi-12
3.	Dr. Anita Singh	Department of Crop Improvement, CSK, Himacal Pradesh Krishi Vishvavidyalaya, Palampur, (H.P.)

### Award for Best Ph.D. Thesis

S.No.	Name of Awardees	Discipline
1.	Dr. Arti Heer	Ph.D. in Biochemistry
2.	Dr. Neeraj	Ph.D. in Genetics and Plant Breeding
3.	Dr. Sunali Mahajan	Ph.D. in Statistics
4.	Dr. Neeraj Singh	Ph.D. in Vegetable Sciences
5.	Dr. Chanchila Kumari	Ph.D. in Home Science

**Award for Best P.G./M.Sc. Thesis**

<b>S.No.</b>	<b>Name of Awardees</b>	<b>Discipline</b>
1.	Ms. Madhvi Singh	M.Sc. in Food Engineering and Technology
2.	Mr. Patel Runit Jagdishbhai	M.Sc. in Plant Breeding
3.	Mr. Yudhishther Singh Bagal	M.Sc. in Agricultural Extension Education



## **RECOMMENDATION OF RASSA NATIONAL SEMINAR 2018**

### **Theme wise Recommendations:**

#### **Technical Session - I**

**Theme: Advances in Crop Production Technologies and Natural Resource Management**

**Sub-Theme: Crop Improvement & Protection Technology**

#### **Researchable issues:**

- Generation of Climate Smart Agriculture technologies
- Technologies for improving Nutrient Use efficiency & Water Use Efficiency under different agro-climatic conditions.
- Development of Smart agricultural tools for hill agriculture
- Use of biotechnological tools for selection of germplasm
- Development of Gender friendly technologies
- Area specific Integrated Farming System models

#### **Developmental issues:**

- Scio-cultural and economic advancement for ease of life in rural areas.
- Local specific farmers oriented policies
- Popularization of climate resilient technologies and area specific IFS models

#### **Policy issues:**

- Specific agricultural modules based on agro-ecological situations must be popularized.
- Gap filling through strengthening of convergence between line departments.

#### **Technical Session – II**

**Theme: Invigorating Transformation of Farm Extension towards Sustainable**

**Development: Futuristic Challenges and Prospects**

**Sub-Theme: Extension system and Policy Issues**

#### **Researchable issues:**

- Mitigation and adaptation options for management of abiotic stress
- Various stress tolerant mechanisms under field conditions need to be studied
- Standardization of sensor based smart tools for conducting various farm operations to make agriculture attractive for young generation

#### **Developmental issues:**

- Promotion of proven sensor based smart tools for drudgery reduction in agriculture
- Promotion of organics to avoid soil and human health hazards
- Use of sea weeds for conserving soil moisture

#### **Policy issues:**

- Diverse gender sensitive indicators, approaches and analysis appropriate to diverse situations and communities should be developed and used.
- Capacity building needs are to be based on analysis of the constraints facing women in organic and sustainable farming

## Technical Session – IV

**Theme: Recent Development in Horticulture**

**Sub-Theme: Food Science and Technology: Sustainable Food Processing**

### Researchable issues

- Resource generation and conservation through need based and sustainable farming system models with horticulture as integral components both for rainfed and irrigated ecologies.
- Agronomic measures for soil and water conservation in undulating terrains using improved crop cultures of existing staple food, horticulture and forage crops.
- Fruit quality in Horticultural crops is mostly climate related, so zonalization for horticulture is must to get export quality produce for instance apple.

### Developmental issues:

- Adoption of robotics and drone technologies in agriculture.
- Use of aeroponics for seed production of potato.

### Policy issues:

- Provision of healthy marketing facilities with removal of middlemen in the marketing channels, cold storage facilities and approach to terminal markets.
- Provision of subsidy on purchase of drones as a tool for overall monitoring of crop.

## Technical Session – V

**Theme: Technical Advances and Innovation in Livestock and Companion Animals**

### Researchable issues

- Research work on pen side diagnostic test for field application
- Locally available feed and fodder should be explored for nutritive values
- Nano technology and edible vaccines has scope of advancement in drug delivery, immune profile and diagnostic markers for livestock diseases
- Conservation of local live stock germplasm for development of resilient breeds.
- Identification of breeding season in sheep of J&K state

### Developmental issues:

- Use of smart technologies e.g Assisted Reproductive Technologies (ART), Embryo Transfer Technology (ETT), use of fold scope microscopy etc at farmer's level.
- Integration of location specific crop and animal components in Watershed Programmes to uplift the rural economy of the region
- Promotion and popularization of smart technologies for management, diagnosis and treatment of live stock diseases
- Mobile based advisory services for immunization and Vaccination of domestic animals

### Policy issues:

- Zone wise breeding strategies of live stock for J&K state may be devised
- Specific policy initiative for promotion of organic live stock farming, backyard poultry and fish farming.

## Technical Session – VII

**Theme: Environment and sustainability**

### Researchable issues

- Diversified intensification of crops with concept of sustainability in irrigated and rainfed ecologies
- Explore and exploit Irrigation potential of the different agro-ecologies to the maximum for crop intensification
- Identification of New crops, crop cultures and cropping systems in changing climatic scenario
- Redefining of growing periods of the rainfed area crops in accordance with standardised weather agro-advisories in the changing climatic scenario
- Studies regarding declining trend of pollinators need to be formulated as their survival has direct bearing on food security

### Developmental issues:

- Contingent crop planning for early, mid season and terminal droughts and other weather aberrations

### Policy issues:

- Provision of financial assistance to the needy farmers for purchase of inputs
- Formulation of policy for improvement of input distribution system in the rural unapproachable distant areas
- Peoples participation in sustainable management of natural resources need to be promoted

## Technical Session – VIII

**Theme: Promoting the competitiveness of Indian Agriculture in a Weakened Global Economy**

**Sub-Theme: Agri-preneurship**

### Researchable issues

- Screening of scalability of farmer's led innovation
- Analysis of institutions to assess their potential as participants and building capacity of partner institutions for up-scaling farmers led innovation.
- Study of backward and forward linkages in major Agri- enterprises

### Developmental issues:

- Promotion of Community based farming
- Regular funding of sustainability to small farms
- Synergetic conversions of banks, NGOs, research institution, state line department may bring positive impact in the form of initiation of income generating activities.

- Facilitating the database to act as a platform for exchange of information and experiences, developing and disseminating theme-based knowledge products

**Policy issues:**

- Minimizing the marketing channels
- Incentives for promotion of round the year cultivation
- The capacity building interventions not only have the potential for changing entrepreneurial competencies but broadening the horizon of the participants to launch their own income generating activities.
- Screening for scalability of farmers' innovations and efforts for their institutionalization pre- requires creation of platform for exchange of information and experiences,
- Developing and disseminating theme-based knowledge products and undertake analysis of partner institutions to assess their potential as participants and building capacity of partner institutions

**Session: Farmers-Scientists and Policy Makers Interactive Meet**

**Researchable issues**

- Development of resource generation and conservation through need based and sustainable farming system modules with Horticulture and Agroforestry as an integral component for rainfed areas.
- Crop diversification through low water requiring oil-seed and pulse crops on inter and intra seasonal basis in rainfed ecologies.
- Identification of New crops , crop cultures and cropping systems in changing climatic scenario and Monkey menace and other wild animals.
- Contingent crop planning for early, mid season and terminal droughts and other weather aberrations

**Developmental issues:**

- Scio-cultural and economic advancement for ease of life in rural areas.
- Local specific farmers oriented policies
- Popularization of climate resilient technologies and area specific IFS models
- Formation of farmer club and farmer producer's organizations( FPOs)

**Policy issues:**

- Gap filling through strengthening of convergence between line departments
- To provide financial aid to the needy farmers for purchase of inputs and improvement in input distribution system
- Provision of healthy marketing facilities with removal of middlemen in the marketing channels, cold storage facilities and approach to terminal markets



# SEMINAR IN THE NEWS



and commercial vehicle drivers to enhance the readiness The highlights of the training revolved around first aid

# SKUAST-J, RASSA to host seminar on farm profitability

## STATE TIMES NEWS

JAMMU: Royal Association for Science-led Socio-Cultural Advancement (RASSA) New Delhi, in collaboration with Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKUAST-J) is going to organise two-day national seminar on 'Smart Technologies to Boost Farm Profitability & Socio Economic Status of Rural India' on November 19 and 20, 2018.

More than 300 distinguished scientists and policy makers from across the country will deliberate on issues of technological innovations, concerning environment, agriculture, food science & transfer of technology to provide a roadmap for doubling farmers' income and overall socio-economic development of rural India.

The objectives of the two-day national seminar are the invigorating transformation of farm extension towards sustainable development; advances in crop production technologies and natural resource management; crop improvement and protection technology; agripreneurship; environment and sustainability and extension system and policy issues.

"Issues pertaining to research, development & administration will be identified and recommendations will be passed on to government departments, Indian Council of Agricultural Research, state agricultural universities, development departments," informed Dr Poonam Parihar, Organising Secretary of the National Seminar.

Society, Udd present.

# 2090 farmers leaving farming every day: DDG ICAR

Excelsior Correspondent

JAMMU, Nov 19: "On an average, 2090 farmers are leaving farming every day, which is a serious issue and needs immediate redressal."

This was stated by Dr N S Rathore, Deputy Director General (Education), Indian Council of Agriculture Research (ICAR), New Delhi, while addressing the national seminar, "Smart Technologies to Boost Farm Profitability and Socio-

hold. He advised Agricultural Scientists and extension workers for working in a mission mode and policy makers for providing other economic opportunities to smallholder farmers for sustainable livelihood.

Dr P K Sharma, Vice Chancellor SKUAST-Jammu, said that in the globalization and digital age era we should manage the information, use decision support system for precision farming and automation to increase input use efficiency which is low in India, and more so

## STATE TIMES

JAMMU: CEO and COO of

Foundation Enterprise

visited gov secondary

Kahpotha reviewed th

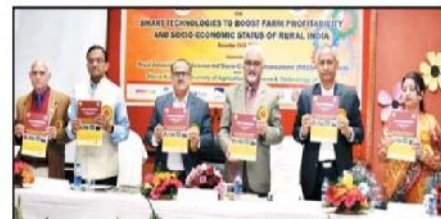
in the imp overall sch

governmen their ass Foundation Quality Programme

During tl and Saikia

the teacher and took tl

the progr: school. The later studen



Dr. Nirimal Singh alongwith others releasing souvenir of the national seminar at SKUAST Jammu.

Economic Status of Rural India', at the Sher-e-Kashmir University of Agricultural Sciences & Technology-Jammu (SKUAST-J), here today.

He said that for achieving sustainable profitability in farming, the policy makers, researcher and extension agencies should lay more emphasis on smart technologies which should be specific to an area, measurable, attainable, realistic and time bound (SMART).

Speaker J&K State Legislative Assembly, Dr Nirimal Singh inaugurated the seminar. In his inaugural address to 300 plus delegates from across the country, he laid emphasis on shifting focus from "agricultural centric" to "agriculturist centric" approach for augmenting the low levels of farm income from around 75,000/- per year per farm house-

in the Jammu & Kashmir State.

Dr A K Singh, president RASSA, delivered a keynote address in the inaugural function and gave an overview of the objectives of RASSA which aims to achieve synergy between socio-cultural and scientific advancement, especially in view of small land-holding in the country. He said villages' prosperity will ensure nation's prosperity.

Dr J P Sharma, convener of the seminar, presented the welcome address. Dr Poonam Parihar, organizing secretary of the RASSA seminar, presented the formal vote of thanks and informed that the issues raised by the dignitaries will be deliberated upon in the technical sessions of the seminar. The seminar was attended by all the Statuary officers, HODs and faculty.

## Sat Sharma provides CDE