

**“Paradigm Shift in Livestock Management to obtain High Quality Animal Products for Enhancing Farm Economy and Entrepreneurship”**

**RECOMMENDATIONS OF THE PLENARY SESSION OF THE 27<sup>TH</sup> Conference of the Indian Society of Animal Production & Management (ISAPM)  
Organised at PGIVER of RAJUVAS, Jaipur, from 5-6 February, 2020.**

**FOCUS**

In tune with the theme of the Conference, the focus was mainly on improving the quality of livestock products via innovations in animal management interventions. The Conference has also paid attention on overcoming the emerging constraints to livestock rearing in India, like the climate change, small livestock farmer problems, enhanced livestock production in the hilly regions of the north and north east, zoonosis etc. In view of the need for promoting livestock based entrepreneurship among youth, special sessions were organised on Incubation and Start-ups and Farmers-Entrepreneurs-Academia Interactions.

**RECOMMENDATIONS OF THE CONFERENCE**

1. **SMALL PRODUCERS:** There is need for approach for improvement of livelihood of the traditional small holder producer to be reoriented with respect provision of services and inputs as well as marketing of animals and their products, so that he/she can withstand the onslaught of intensive production systems. Improving the income of the small farmer is crucial as still bulk of the livestock products produced in India come from this category. Teaching, research and extension need be tuned in favour of the small farmer.
2. **CLIMATE CHANGE:** In spite of the research output indicating to the relative efficacy of various housing modifications, cooling, feeding and management for amelioration of the thermal stress on animals, we have yet to strive to get practicable clearer picture (solutions) of climate change – livestock interrelationships, under Indian conditions. It is encouraging to see that the emissions of the main Green House Gas, methane by ruminants can be reduced by special feeds, Ayurveda combinations and homeopathy medicaments. Such measures need be extended to the ruminant keeping producers.
3. **QUALITY PRODUCTS & ZONOSIS:** Realising the quality of the easily perishable India produced livestock product as the main cause restricting their export potential; rejection rates by milk cooperatives; and rejection rates of meat by health authorities in slaughter houses and eggs; ways and means of improving livestock product quality was emphasised. It can also be seen, obviously, as the cause for reduction in farmers' income. Emphasised was avoidance of product contamination, antibiotic and pesticide residues in products via shed-animal-attender health and hygiene; non-use of hormones, antibiotics and pesticides via organic and precision farming; use of Ayurveda and Homeopathy medicines with less or no side effects; and more pro-active implementation of animal welfare measures, as contented animals produce more and better quality products. Again the attempt was to seek efficient transfer of technology methods to take them to the field for the betterment of small farmers. It was also realised that steps taken for improvement of livestock product quality will be a boon to the containment of zoonotic diseases.
4. **INTENSIVE LIVESTOCK FARMING IN MARGINALISED AREAS:** Growth of intensive livestock and poultry farming was existing in semi-arid areas and near big and ready markets for livestock products. Whereas, it was felt that there are vast hilly areas in the Himalayan states, Jammu & Kashmir, Ladakh, the North-Eastern states with plenty of natural resources. They are native to special species like the Kashmiri Anz Geese and other water fowls, the Yak, and the Mithun; as well as specialised varieties of sheep and goat breeds. There is immense potential for undertaking intensive

livestock farming in these areas that would be economically beneficial to the local farmers, as well improve the value of livestock products in the country immensely. The specialists are advised to undertake special measures in this direction. It was submitted the government for special financial and development focus in such areas.

5. **INCUBATION AND START-UPS:** It is essential that the youngsters coming out of Veterinary Colleges as full-fledged veterinarians should become job givers rather than job seekers. In this the livestock sector also is benefited as such youngsters starting their own business pertaining to products and services for the sector can increase outreach of the system greatly. Keeping this in mind and in view of the nearly 300 youngsters participating in this Conference, a special and unique Session was held, eminently coordinated by Prof. (Dr.) Col. A.K. Gahlot, the Honourable former Vice Chancellor of RAJUVAS. Participated were experts from the National Institute of Agricultural Marketing, Jaipur (Dr. Chandra Sekhara and Dr. Chinmaya), who compered the session. Dr. Vishnu Sharma, Honourable Vice Chancellor. RAJUVAS, explained what type of services and inputs does the livestock sector needs that can be taken up as Start-ups by youngsters. Two youngsters from Chennai and Jaipur, respectively, described their experience in starting up enterprises of production and marketing 'Quick Paper-Based Milk Adulteration Testing Kits' and 'Economy Visual-based Artificial Insemination Devices' that can deliver semen accurately into the middle of the cervix. There was an interesting exchange of views between the youngsters on and off the dais, which is a true reflection of the great interest that our future generation bestowed on the subject.
6. **FARMERS-ENTREPRENEURS-ACADEMIA INTERACTIONS:** This was again an innovative Session engineered by the Former and the Present Honourable Vice Chancellors of RAJUVAS. While Shri Yadav, a progressive farmer from Rajasthan described the pros and cons of livestock farming and the famers' expectations from the R&D specialists and the government. Shri Kale (Pollutant-free Small Ruminant Meat Production with *in situ* Organic Feed Production and Custom Slaughter) and Dr. Prakasha Rao (Foods and Feed Mills), both industrialists, have explained how the models that they developed and implementing can be replicated in other parts with necessary modifications as per the local conditions. The academicians on and off the dais have expressed the need for stronger bonds between the livestock farmers and livestock based industrialists in the two-way exchange of notes on available technologies and needs of the farmers/industrialists. The whole house came out with a very satisfied frame of mind after the session ended. It was a good experience for the specialists, farmers and industrialist – all working for the livestock sector.

## **RECOMMENDATIONS OF INDIVIDUAL TECHINCAL SESSIONS**

### **Session No: I (Oral)**

Session Title: Livestock production and management strategies for enhancing farmer's income and entrepreneurship

#### **Recommendations:**

1. In his lead paper Dr. Datta Rangrekar emphasise on disruptive approach for improvement of livelihood of small holder producer.
2. Dr. S.Pan outlines the importance and application of precision livestock farming for the benefit of farming community and also an entrepreneurship.
3. Dr. S.C. Mehta in his lead paper focussed on the integration of molecular and traditional breeding tools for enhancing equine production in general.

#### **Oral Presentations**

1. Different floor types have significant effect on growing of goats and other livestock species.

2. Modified feeding and housing management significantly improved puberty of Murrah buffalo heifers.
3. There is scope for more intensive studies on equine about feeding management in Kashmir valley.
4. Genomics and marker assisted selection for diseases resistance and phenotype put together to explain variability to the extent of 90% or overcome.
5. Different strategies to be adopted in Ladhak region of J& K for yak production.
6. Draught performance of khillari and CB and encouragement of indigenous breeds like khillari for sugarcane carting operations may be implemented.
7. Sojat goat a good source of income in Marwar region.
8. Adoption of Frieswal – a synthetic cattle breed in Teran region of Utterkhand

### **Session No: II (Oral)**

Session Title: New Farming Systems, Methodology and Technology.

#### **Recommendations:**

1. There is need of shifting sustenance to commercial sheep farming to increase the productivity per head and better quality product at economical cost which can be achieved by skill development, improvement of indigenous sheep, intensive feeding and accelerated lambing system.
2. Qualitative and quantitative data is required for careful management and improving productivity in which artificial intelligence like sensor based devices can play an important role for health issues, heat detection etc. and various animal welfare issues.
3. Udder shape, teat shape, udder depth and teat length can facilitate the incidence of mastitis in dairy animals and can be used for selection of dairy farm animals.
4. Infra-red thermographs can be a very good non-invasive tool for evaluation of sub-clinical and clinical mastitis in dairy farm animals.
5. Non-invasive techniques viz. scrotal infra-red thermography, ultrasonography of testis, rump and testicular consistency can be used in evaluation of buffalo bull for quality semen production.
6. Udder and teat biometry can be important selection criteria for high yielding Deoni cattle.
7. Near infra red reflectance spectroscopy(NIRS) can be a very important tool for effective formulation of sorghum based feed.
8. There is a huge potential of using indigenous micro-organisms (IMOs) as an inoculumsof deep litter system of piggery by incorporative the aerobic composting model.

### **Session No: III (Oral)**

Session Title: Climate Change, Animal Behaviour, Welfare and Ethics

#### **Recommendations:**

1. It was emphasized for better animal production and productivity, animal welfare aspect has to be considered taking in view the five freedom concept.
2. In order to reduce the impact of land fragmentation on livestock faring in India, agro-livestock industry at farmer level has to be introduced. Further, value addition farm/animal produce can improve the income of famers.
3. Sex sorting technology can be given a better shape by establishing laboratories at various levels in order to produce more number of female animals.
4. Welfare of animals in gaushala's may be improved for well being of animals and better productivity.
5. Small and medium intensive feeding is better andeconomical in dairy animals.
6. Coir pith and DSM is better for well being and improving the productivity in animals.

7. Use of EPE sheet and paint on the roof of animal shed can alter the microclimate for better well being of animals and production.
8. Evaporative cooling pad and fogger system can be improve the behaviour and performance of birds during heat stress.

**Session No: IV (Oral)**

Session Title: Animal Feeding, Breeding and Health Management Strategies for Economic Production

**Recommendations:**

1. Integrated resourcemanagement with water harvesting is an ideal strategy to increase productivity and income in any livestock farming.
2. Supplementary feeding & improved housing along with biostimulation by using a bull during growing period can hasten the age at puberty to about 20 months income of Murrah buffalo.
3. Supplementary feeding & improved shelter has the potential to reduce the age at sexual maturity & successful ejaculation to about 15-18 months in Murrah bull.
4. Improved shelter model constructed in East-West direction by using locally available insulated roofing material with a roof height of 8-10 feet were found suitable for housing of sheep & goat in arid & semiarid region of the country.
5. Different models of manger have been develop based on the ingestive behaviour of sheep & goat which can be recommended for use in field for better feed utilization & improved animal health.

**Session No: V (Oral)**

Session Title: Strategies for Enhancing Superior Quality Animal Products and Value Addition for Feed Security and Safety

**Recommendations:**

1. Dwindling camel population is a matter of concern in light of resent FSSAI approval to camel milk value addition of other traditional products and services camel should be utilized for entropreurnerelpotential.
2. Dr. Gouri M. emphasized scope of utilization of homeopathy as alternative medicine.
3. Replacement of paddy cultivation with maize cum pig farming need of hour to need of our nutigate environmental issues and diversify farmer's incomein trans-gangetic place region.
4. Multipronged approaches are required to make livestock farming more sustainablewith special emphasis on integration of resources and women centric training programmes.
5. Further emphasis was given on certification of organize livestock farming in hilly terrains with special reference to nomadic goat farming.

**Session No: VI (Oral)**

Session Title: Management Approaches for Poultry Production, Laboratory, Wild and Pet Animal

**Recommendations:**

1. Native poultry breeds including ducks play a crucial role in supporting the livelihood of rural farmer, therefore genotypic & phenotypic characterization of productive traits of their indigenous poultry birds need to be taken up.
2. Bio-security measurements like composting use of black soldier fly can be effective means of controlling pollution and proper litter management at poultry farms.
3. Supplementation of herbs (Geloi, Phytogenic Mixture Amla, Ashwagandha and Turmeric) can be very helpful in improving the production performance of poultry.

4. Early detection of sub-clinical mastitis is very important to control the production losses. Many techniques are already being standardized. Further need is felt to develop a farmer friendly, inexpensive and portable methodology for the same.

### **Poster Sessions I, II and III**

The three Poster Sessions were held on three different occasions but simultaneous to, respectively, Oral Technical Session 1 & 2, Oral Technical Session 3 & 4 and Oral Technical Sessions 5 & 6. In all 4 Poster Presentations were presented mostly by youngsters, based on their research findings in the fields of the Main Oral Technical Sessions.

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