

Proceedings of Brainstorming Session

Venue: National Symposium on *Improvement of Livestock productivity through conventional breeding and emerging technologies in changing global scenario*, ANGRAU Auditorium, Rajendranagar, Hyderabad

Date: 22nd November, 2012

A brainstorming session was organized as a side event at the venue of national symposium organized by Indian Society of Animal Genetics and Breeding (ISAGB 2012) with active support of Sri Venkateswara Veterinary University in collaboration with Agri-Biotech Foundation, Hyderabad.

Dr. Madhuri Subbiah, Scientist at National Institute of Animal Biotechnology (NIAB), greeted the participants and welcomed the dignitaries on to the dias.

Dr. V. Prabhakar Rao, Vice-chancellor of Sri Venkateswara Veterinary University, chaired the session with Prof. P. Reddanna, Officer on Special Duty (OSD) of NIAB as vice-chairman of the session. Prof. P. Thangaraju, former Vice-Chancellor of Tamil Nadu Veterinary & Animal Sciences University (TANUVAS), Chennai and President of ISAGB and Dr. K. R. Trivedi of NDDB were also on the dias.

Prof. P. Reddanna, OSD, NIAB briefed on the vision and mission of NIAB and explained about the objective of the brainstorming session. The chairman briefed about activities of Agri Biotech Foundation, the collaborator for organization of brainstorming session and requested Dr. K. R. Trivedi to present an overview of livestock production in the country vis- a- vis global scenario.

Dr. K. R. Trivedi during his thirty minutes presentation elucidated the progress made in livestock production in India over the years and the need for modern infrastructure facilities. He emphasized on the National Dairy Plan coterminous with 12th Five Year Plan and beyond with focus on improvement of milk production in the country. He mentioned about the support from NDDB to Institutes to establish semen production stations and pedigree selection centers. All the SOPs related to the same are available in NDDB's website. He took all the participants to guided tour of semen production facilities, cattle breeding facilities and future challenges like production of adequate number of proven bulls, quick sire evaluation to achieve the goals. He also explained how the sires are evaluated in Europe using genomics data to quicken the sire selection process along with the conventional sire evaluation protocols. He discussed the need for SNP based chips for sire evaluation in Buffaloes and embryo transfer technologies as the means for achieving faster genomic selection. For development of Buffalo SNP chip, Dr Trivedi

has emphasized on urgent requirement of Buffalo genome sequencing. He introduced the audiences to a novel technology of sexing semen that can aid in reducing the overall production cost in dairy farms.

His presentation made the gathering to ponder over issues like quick sire evaluation through genomic studies and sexing of sperms to augment milk production.

Following Dr. Trivedi's presentation, the session was opened for discussion.

Dr. R. M. Acharya, the distinguished senior most scientist in the country, appreciating the presentation had a word of caution about loss of data due to many factors at the field level. Some more participants agreeing to his contention emphasized that it could be more than fifty per cent.

Dr. B. R. Yadav, Principal Scientist and National Fellow heading the Livestock Genome Analysis Laboratory of NDRI cautioned about chromosomal aberrations in such envisaged massive development programmes using unconventional modern technologies like sexing of sperms etc.

Dr. R. K. Sethi, Director, Central Institute for Research on buffaloes, Hissar posed the problem of development of genome chips for buffaloes.

Dr. Ramana Reddy expressed his anguish (challenge) about the performance of Jersey cross-breds and HF cross-breds at farmers shed in rural scenario and remedy.

Dr. Vara Prasada Rao of Veterinary University flashed the problem of inadequate bull numbers in semen production stations leading to the risk of genetic drift.

Dr. Madan Naik, a Private Entrepreneur raised the question about current status of myostatin gene sequencing, identification of SNPs and introgression of agronomically important mutation in our sheep and goat livestock for meat production.

In context to Dr Madan Naik's question, one of the senior participants Dr Sethi from Center for Buffalo Research, Hissar mentioned that they are in process to conduct the sequencing in buffaloes. But other participants raised questions on sheep and goat. But unfortunately it was found that there was no clear strategy on Myostatin research and it's exploitation for meat production in India.

Dr Madan Naik also appreciated and agreed that there was indeed requirement for Buffalo Genome Sequencing for further characterization of breeds and development of genomic chips. Dr Madan Naik was also wanted to touch upon the other issues in Animal

production and genetics but due to less time, he couldn't able to put forward them for the discussion.

Dr. D. S. K. Kanaka Sundara Rao of Visakha Dairy, A Dairy company venture emphasized the need for sexed sperm straws because of the demand from farmers. Many participants were apprehensive about the efficiency of machinery used for sexing of spermatozoa as the existing equipment of European origin can produce only 100 (one hundred) doses per day. A need for research to improve the processing of sexed semen in larger quantity per day is envisaged. There was a discussion on pros and cons of sex determination process and the sophisticated machines at sperm production center. Dr. M. Muralidhar of College of Veterinary science, Gannavaram of Sri Venkateswara Veterinary University shared his experience with sexing of embryos.

Dr. Piedy Sreeramulu of Agri Biotech Foundation, Hyderabad summed up the proceedings and flashed two issues which came out of the deliberations in the brainstorming session. The first issue was the development of genomic chips for animal productivity (crossbred cattle, buffaloes, sheep and goats) by genome sequencing and the second one is sex determination technology at sperm level as the machines are of European origin with exorbitantly prohibitive cost and very slow technology. The participants numbering 37 (thirty seven) were from national centres on cattle, buffaloes, sheep & goats from all the four corners of country. Apart from these members from state veterinary universities, state Animal husbandry departments, private entrepreneurs and livestock development cooperatives had also actively participated.

The proceedings came to an end with the proposal of vote of thanks expressing gratitude to Chairman, dignitaries and participants, ISAGB and Sri Venkateswara Veterinary University.